

ORDER NO. KM40209941C2

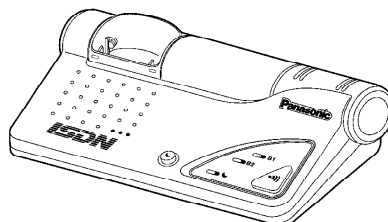
Telephone Equipment

Euro ISDN Compatible

KX-TCD707GRS **ISDN Digital Cordless Phone** **Silver Version** **(for Greece)**



(HANDSET)



(BASE UNIT)

SPECIFICATIONS

SPECIFICATION

Standard:	DECT=Digital Enhanced Cordless Telecommunications GAP=Generic Access Profile (herstellerübergreifendes DECT-Funkübertragungsverfahren)	Operating conditions:	5° - 40°C, 20 - 80% relative air humidity (not condensing)
Number of channels:	120 Duplex Channels	ISDN signalling:	Euro ISDN Basic Rate Connection DSS1 Protocol 2B+D Channels (Two 64 kbit/sec and one 16 kbit/sec) Transmission rate 192 kbit/sec Frame frequency 4 kHz.
Frequency range:	1.88 GHz to 1.9 GHz	Dimensions, Base unit:	About 208 mm x 112 mm x 60 mm (L x W x D)
Duplex procedure:	Time Multiplex, 10 ms frame length	Dimensions, Handset:	About 136 mm x 49 mm x 32 mm (L x W x D)
Channel Spacing:	1728 kHz	Weight, Base unit:	About 335 g
Bit rate spacing:	1152 kbit/s	Weight, Handset:	About 152 g
Modulation:	GFSK	AC adaptor cord length:	About 1.8 m
Voice coding:	32 kbit/s	Connection jacks:	ISDN line cord: Modular plug 8/4
Operation range:	Up to 300 m outdoors, up to 50 m indoors	AC adaptor plug:	EURO jack and DC plug
Power source:	AC Adaptor 230 V ~ /50 Hz	Telephone line cord:	1) Modular plug 6/2 and 2) Modular plug 6/4
Power consumption, base unit :	13.8 VA	Telephone line cord length:	1) 1.8 m and 2) 2.2 m
Battery life, Handset (if batteries are fully charged):	Standby: Up to 150 hours Talk: Up to 15 hours Wireless Internet Access : Up to about 8 hours		

- Specifications are subject to change.
- The illustrations used in this manual may slightly differ from the original device.

**© 2002 Kyushu Matsushita Electric Co., Ltd. All rights reserved.
Unauthorized copying and distribution is a violation of law.**



WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

When you note the serial number, write down all 11 digits. The serial number may be found on the bottom of the unit.

FOR SERVICE TECHNICIANS

ICs and LSIs are vulnerable to static electricity.

When repairing, the following precautions will help prevent recurring malfunctions.

1. Cover plastic parts boxes with aluminum foil.
2. Ground the soldering irons.
3. Use a conductive mat on worktable.
4. Do not grasp IC or LSI pins with bare fingers.

CAUTION

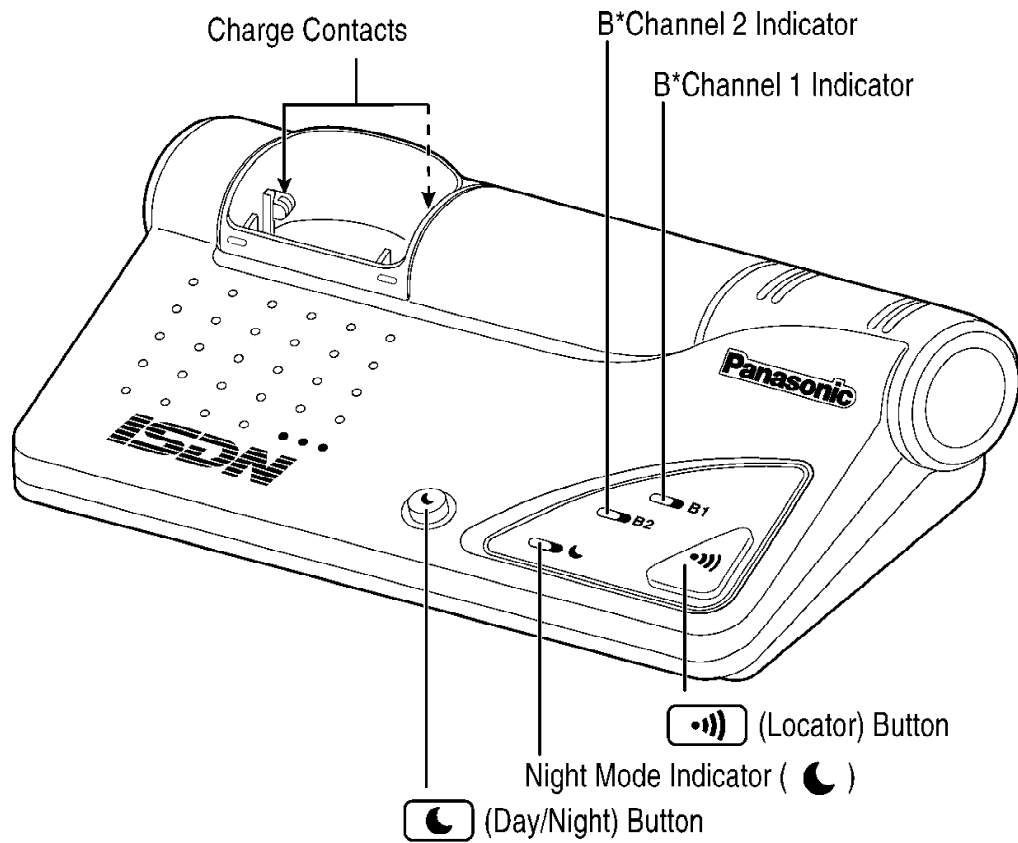
Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer.

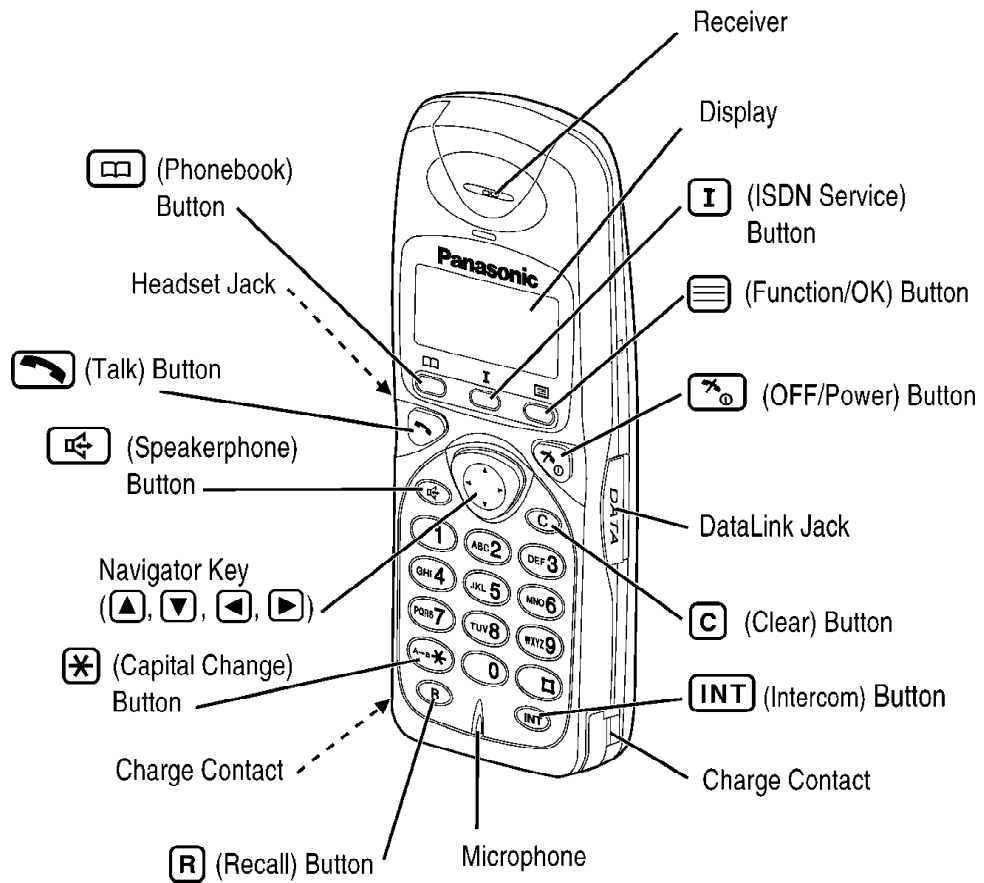
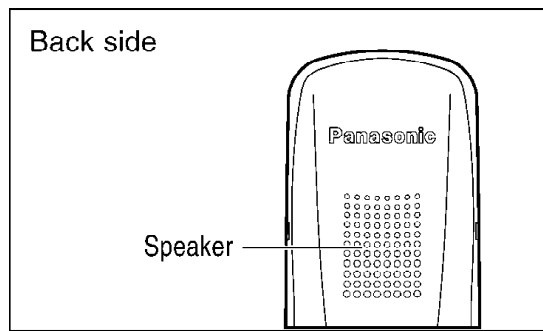
Dispose of used batteries according to the manufacturer's Instructions.

1. LOCATION OF CONTROLS

1.1. Base Unit










1.2. Handset






1.3. Display



Icons

- | | |
|--|---|
| <p> The in-range icon indicates that the handset is in range of the base unit. It flashes when the handset is out of range.</p> <p> The page/intercom icon is displayed when paging or using the intercom. It flashes when another unit pages the handset.</p> <p> The talk icon is displayed when making or answering calls. It flashes when an external call is being received.</p> | <p> The call prohibition icon is displayed when this mode is turned on.</p> <p> The message waiting icon is displayed when receiving a call during conversation or no response.</p> <p> The phonebook icon is displayed when storing or viewing the phonebook items.</p> <p> The battery icon indicates the battery strength.</p> |
|--|---|

Characters

-  "Pause" is selected while dialing.   is pressed while dialing.

2. DISASSEMBLY INSTRUCTIONS

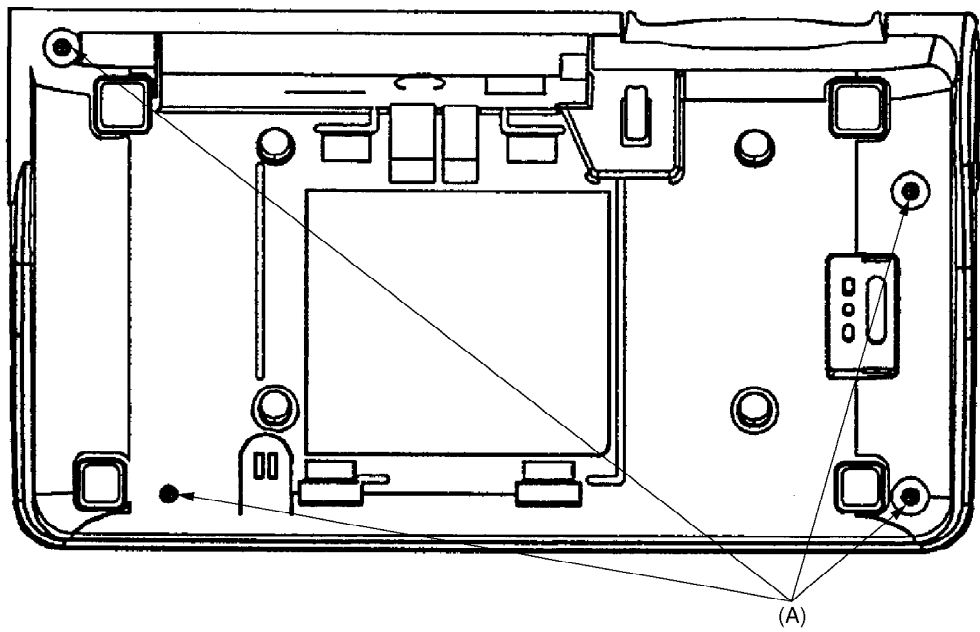


Fig. 1

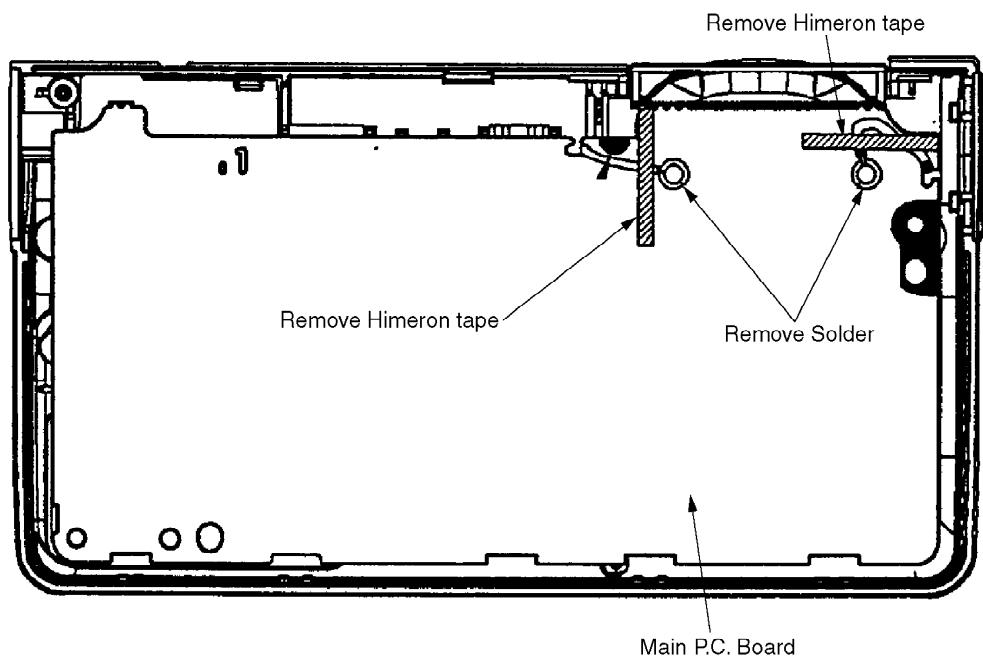


Fig. 2

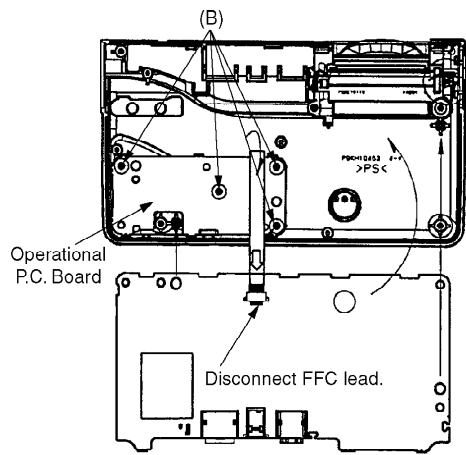


Fig. 3

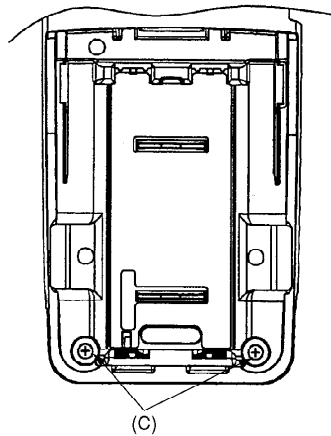


Fig. 4

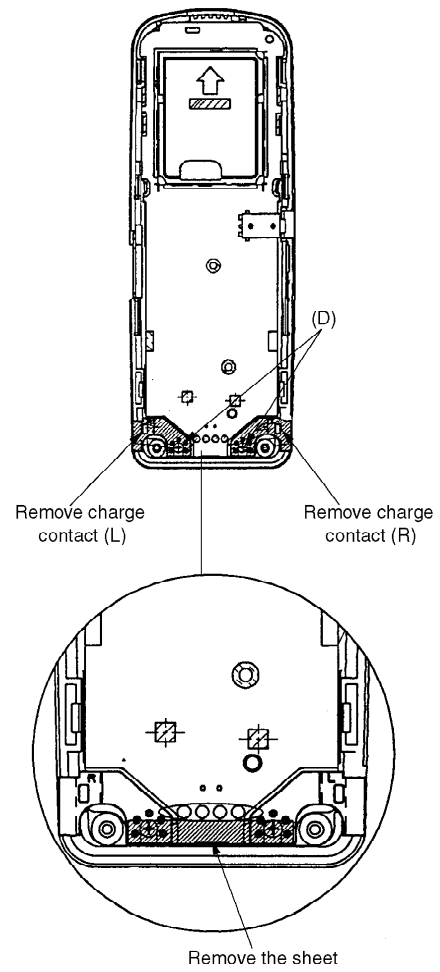
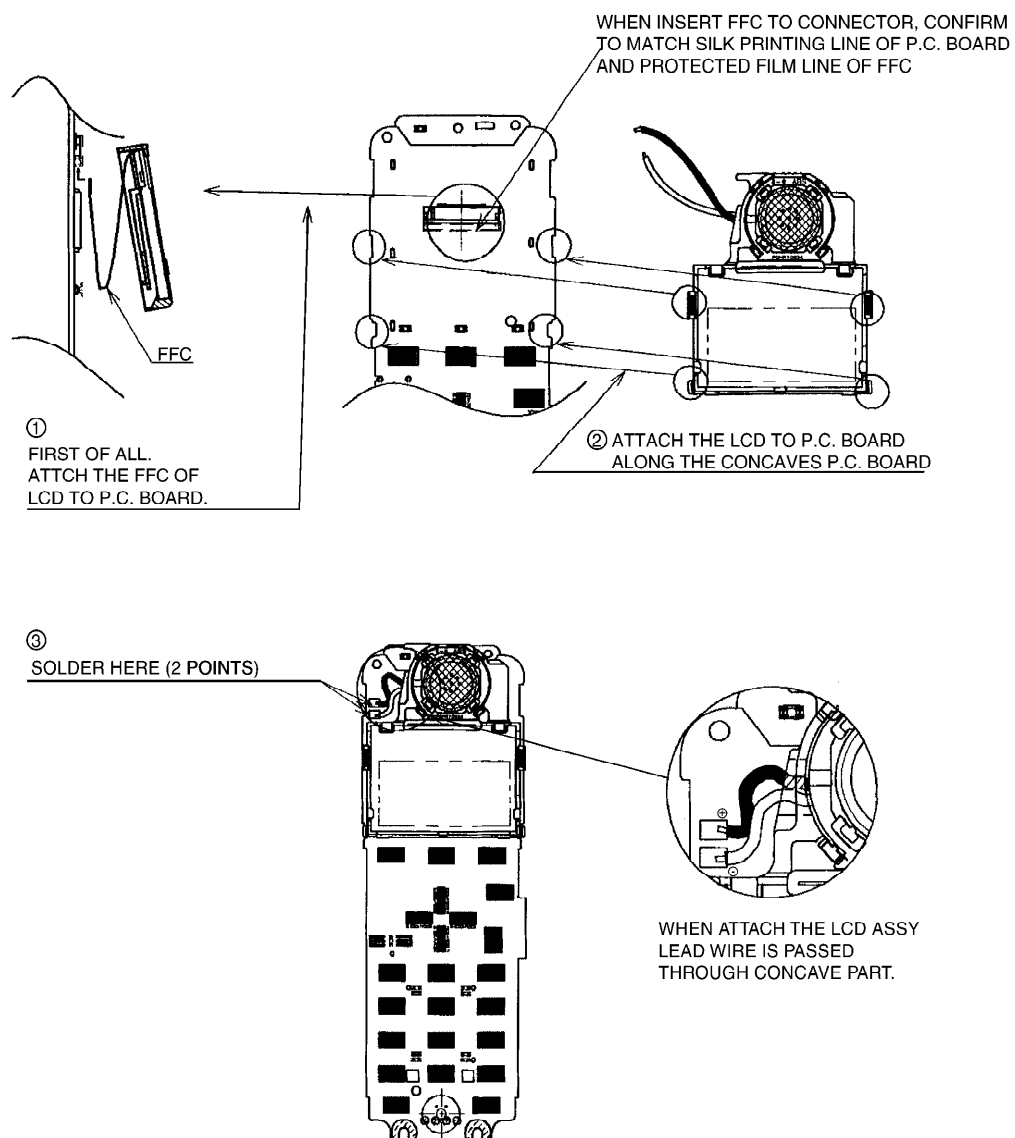


Fig. 5

Shown in Fig.-	To Remove	Remove
1	Lower Cabinet	Screws (2.6 × 14) × 4
2	Main P.C. Board	Remove the P.C. Board
3	Operational P.C. Board	Screws (2.6 × 10) × 4
4	Rear Cabinet	Screws (2 × 8) × 2
5	Main P.C. Board	Screws (2 × 6) × 2

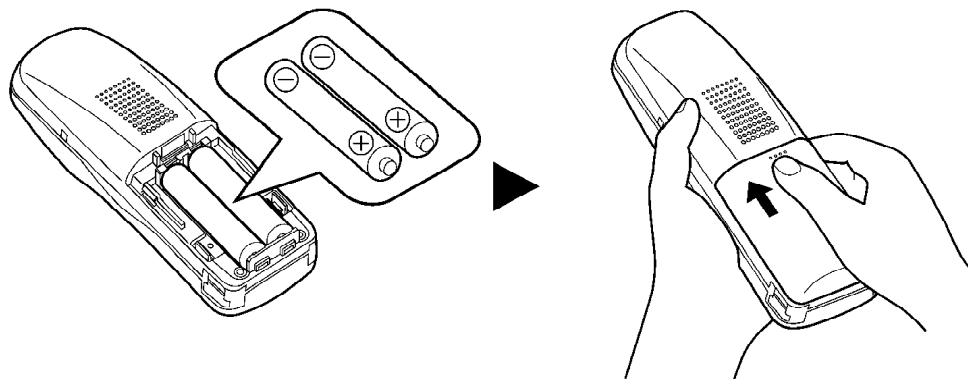
2.1. Assembly the LCD to P.C. Board (Handset)



3. SETTINGS

3.1. Installing the Batteries in the Handset

Install the batteries as shown. Then install the handset cover.

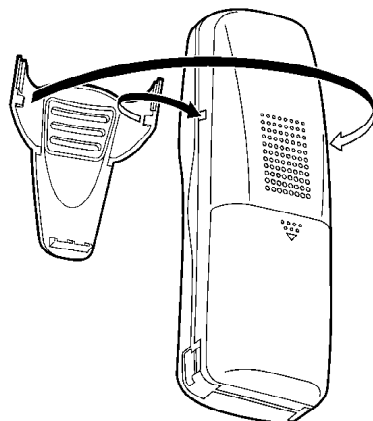


- If the rechargeable batteries are not inserted correctly, the handset will not work.

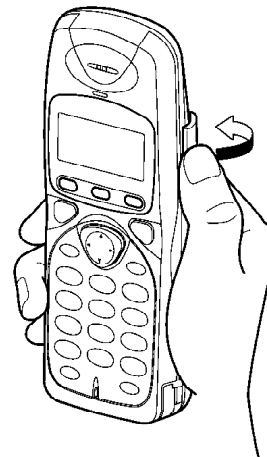
3.2. Using the Belt Clip

You can hang the handset on your belt or pocket using the belt clip.

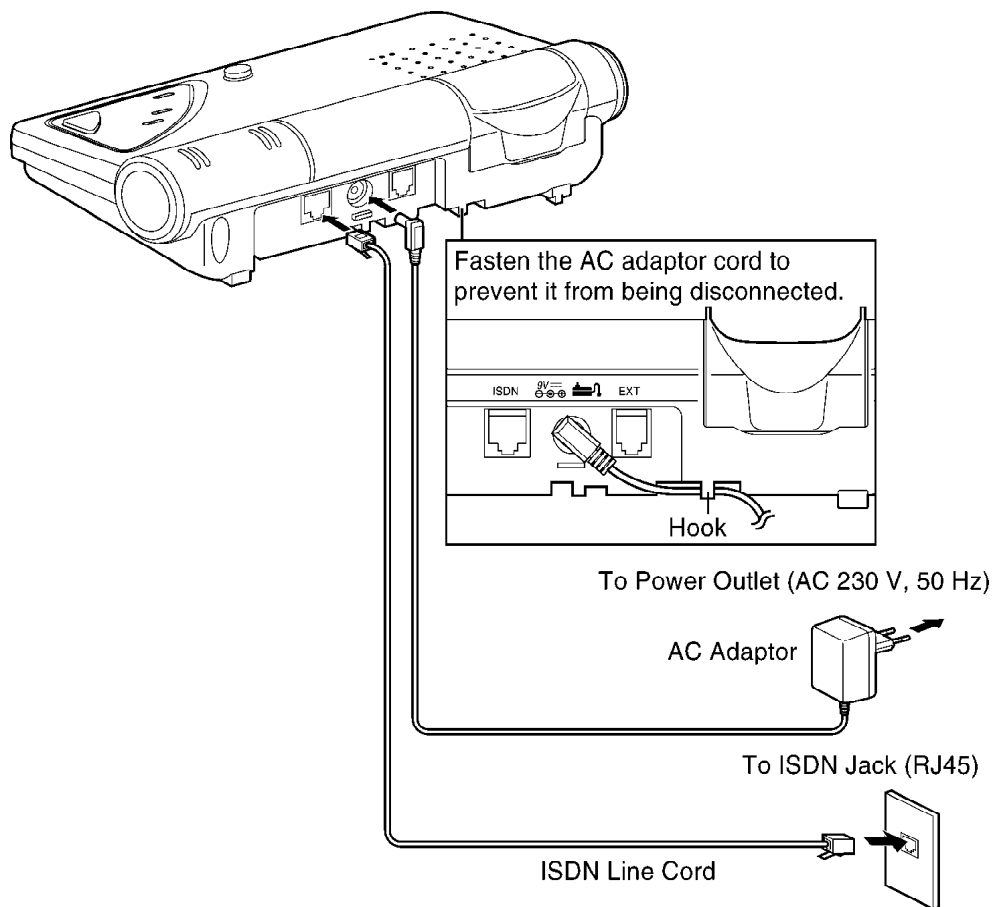
To attach the belt clip



To remove the belt clip



3.3. Connections



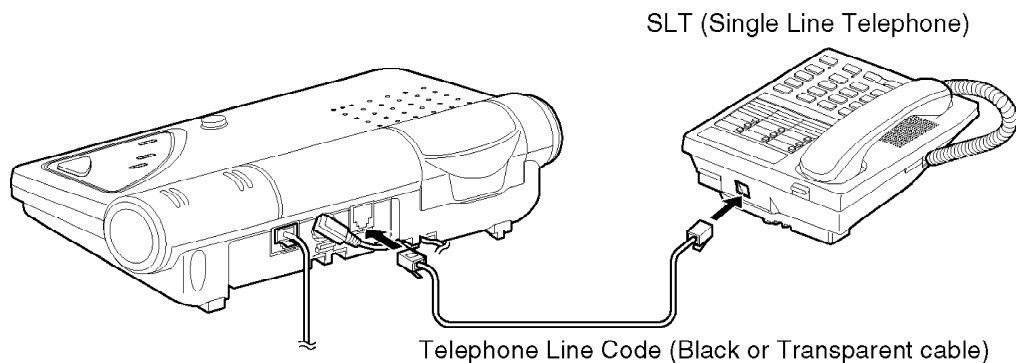
- **USE ONLY WITH Panasonic AC ADAPTOR PQLV10CEZ.**
- **When the AC adaptor is connected to the base unit, B channel 1 indicator, B channel 2 indicator, and night mode indicator (☾) will be lighted shortly and turned off.**
- **The AC adaptor must remain connected at all times. (It is normal for the adaptor to feel warm during use.)**
- **The telephone will not work during a power failure. We therefore recommend you use a standard telephone and ISDN equipment power supplied from the network to connect this Digital Cordless Phone to the line.**
Your Panasonic sales shop can offer you more information about connection possibilities.
- **If your unit is connected to a PBX which does not support ISDN services, you cannot access those services.**
- **Due to power interruptions, radio link cut off may occur.**

3.4. Basic system construction

The unit has a basic capacity of 9 stations (8 handsets and an SLT). Two communication channels can be supported on one ISDN port. It is capable of supporting one communication device, such as SLT (Single Line Telephone), facsimile, and data terminal. To expand its capabilities, the system can be equipped with optional components or customer-supplied peripherals.

3.5. Connecting a Communication Device

Ex. A SLT is connected.



- The connected communication device should be placed 1 meter or more away from the unit.

3.6. To set the other communication device

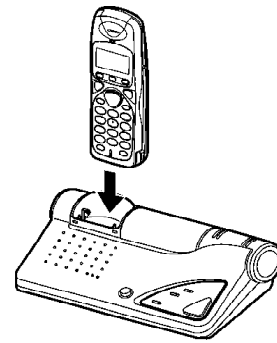
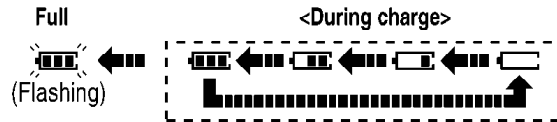
1. Connect the telephone line cord (black cable) to the internal analog port of the unit and connect the other end to the communication device you desire to use.
2. Pick up the handset of the telephone and listen to the dial tone.
3. If you can hear the dial tone, the setting is completed. If you cannot hear the dial tone, change the black cable to transparent cable, then pick up the handset. If you hear the dial tone, the setting is completed.

Operating more than one handset

- allows 2 intercom calls while simultaneously conducting one external call.
- allows 2 external calls while simultaneously conducting one intercom calls. In this case, SLT cannot be used.



3.7. Battery Charge

At the time of shipment, the batteries are not charged. To charge, place the handset on the base unit. Please charge the batteries for about **15 hours** before initial use. During charging the battery, battery icon is as shown below.




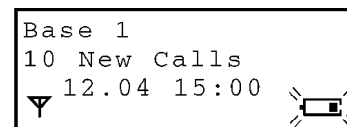
Battery strength

You can check the present battery strength on the display

Battery strength	Fully charged	High	Medium	Low	Need to be charged.
Display prompt	 (Flashing)				 (Flashing)

Recharge


When " " flashes or the unit beeps every 15 seconds, recharge the batteries.



Battery information

After your Panasonic batteries are fully charged:

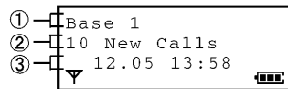
Operation		Approx. Ni-MH battery life
While in use	Talk	Up to about 15 hours
	Wireless Internet Access	Up to about 8 hours
While not in use (Standby)		Up to about 150 hours

- Battery life may be shortened depending on usage conditions, such as:
 - when connecting the Data Link cable to the COM port on your computer,
 - when viewing the Caller ID Caller List,
 - when talking in speakerphone mode, or using headset, and
 - ambient temperature.
- **Clean the handset and the base unit charge contacts with a soft, dry cloth. Clean if the unit is subject to grease, dust or high humidity.**
- Otherwise the batteries may not charge properly.
- If the batteries are fully charged, you do not have to place the handset on the base unit until " " flashes. This will maximize the battery life.
- The batteries cannot be overcharged.

3.8. Turning the Power ON

Press and hold .

- After all the possible configurations briefly appear, the display will change to the following. Then the handset is in the standby mode.



- ① The current connected base unit number: You can choose whether to display the base unit number, handset number or no display in the standby mode by programming.
- ② The number of new Caller ID calls received: If there is no call received, ② will go blank.
- ③ The current date and time: **Automatic Date/Time Adjustment**
Date and time are assigned automatically by the ISDN service provider you contract to when you make the first external call and the other party answers, but not a first receiving incoming external call. This feature is not available if your ISDN service provider does not provide the service.

If a power failure occurs, the incorrect date/time will be shown. The date/time will be adjusted if you make a call.

To turn the power OFF, press and hold  until a beep sounds.

- The display will go blank.
- The handset will not ring.
- When the power is OFF, the base unit will ring only when the call distribution is set to "ALL" or the intercept routing is set to "ON".

4. OPERATIONS




4.1. Programmable Settings




4.1.1. Selecting the Display Language

You can choose the one of 12 display languages. The factory preset is German. Make sure that the power is ON and the unit is in the standby mode.



1 Press .

2 Press  or  until the arrow points to "Setting Handset" then press .


3 Press  or  until the arrow points to "Display Option" then press .

4 Press  or  until the arrow points to "Select Language," then press .

- The current setting is at the arrow.

5 Press  or  to select the desired language.

6 Press .

- A beep sounds.
- The display shows in the selected language.
- To return to the standby mode, press .


4.1.2. Registering Optional Handset(s)

Registration is necessary for optional handset(s). You can register up to 8 handsets at the base unit.




The model number of the optional handset is the KX-A116EXS and KX-A117EXS.




The included handset is pre-registered at the factory and assigned the handset number 1. The handset number is used as the station number. The extra handset must be registered before using multiple handsets feature. Only one handset can be registered at a time.




Make sure that the power is ON and the unit is in the standby mode. Registration must be completed within 1 minute.

1 Base unit where handset is to be registered:
Press and hold  on the base unit for more than 10 seconds until a confirmation tone sounds.




2 Handset:
Press .

3 Press  or  until the arrow points to "Setting Handset," then press .

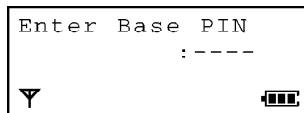
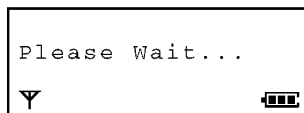
4 Press  or  until the arrow points to "Registration" then press .

5 Press  or  until the arrow points to "Register H/Set" then press .

- The available base unit numbers are displayed.

6 Press  or  to select the desired base unit number 1 to 4, then press .

- The number is assigned as the base unit number for the handset.

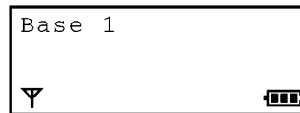



7 Enter the 4-digit base unit PIN.

8 Press .

- "Please wait..." is displayed, then a beep sounds.
- The handset will return to the standby mode. The current connected base unit number will be displayed.

Ex. The handset is registered to the base unit 1.



- You can exit the programming mode any time by pressing .

- To register the handset in more than one base unit, repeat from step 1 with the other base unit(s).
- The base unit number which the handset is currently in contact with can be displayed in the standby mode. Calls (both incoming and outgoing) can be conducted only via the displayed base unit (even if the radio areas overlap with neighbouring base units).

We recommend you to change the handset/base unit PIN to prevent unauthorized use of your unit by another person.

















4.1.3. Selecting the Handset/Base Unit Ringer Volume


You can program the desired handset/base unit ringer volume.

Make sure that the power is ON and the unit is in the standby mode.

Handset ringer volume


6 levels are available. The factory preset is 3. When set to OFF, the handset will not ring.

- 1 Press .
- 2 Press  or  until the arrow points to "Setting Handset" then press .
- 3 Press  or  until the arrow points to "Ringer Option" then press .
- 4 Press  or  until the arrow points to "Ringer Volume" then press .
 - The current volume is displayed and rings.
- 5 Press  to increase or press  to decrease the volume.
 - Each time you press  or  the volume will change and ring.
 - Ex. HIGH is selected.
 - To turn the ringer OFF, erase "■" by pressing  until "OFF" is displayed.
- 6 Press .




 - A beep sounds.
 - To return to the standby mode, press .
 - If set to OFF, "Ringer Off" will be displayed in the standby mode.

Base unit ringer volume

4 levels (HIGH, MEDIUM, LOW, OFF) are available. The factory preset is MEDIUM. When set to OFF, the base unit will not ring.

1 Press .

2 Press  or  until the arrow points or "Setting Base," then press .

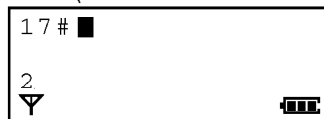
3 Press  or  until the arrow points or "System" then press .

4 Enter the 4-digit base unit PIN.

- "Input Command" is displayed.

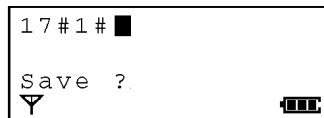
5 Press ,  and .

- The current level is displayed on the 3rd line. (Ex. 2: MEDIUM is selected.)




6 Enter the volume level (0-3), then press .

- 0: OFF 2: MEDIUM
- 1: LOW 3: HIGH
- Ex. LOW is selected.




7 Press .


- A beep sounds.
- To return to the standby mode, press .
- The base unit will ring only when the call distribution is set to ALL mode or the Intercept routing is set to ON.

4.2. Making Calls

4.2.1. Making Calls

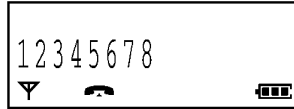
Make sure that the power is ON

1 Press .

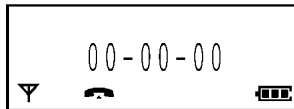
- "  " is displayed.


2 Dial a phone number.

- The dialed number is displayed.



- After the other party answers your call, the display will show the length of the call.






3 To hang up, press  or place the handset on the base unit.


- The handset will return to the standby mode.

4.2.2. To Dial After Confirming The Entered Number

1 Enter a phone number.

- The entered number is displayed.
- If you misdial, press .
- Digits are erased from the right.
- To cancel, press and hold  or press .

2 Press .

- "  " is displayed.
- After the other party answers your call, the display will start showing the length of the call.

3 To hang up, press  or place the handset on the base unit.

- The handset will return to the standby mode.

4.2.3. To Have a Hands-free Phone Conversation (Using Digital Speakerphone)


1 Press .

- The button lights.

2 Dial a phone number.






- The dialed number is displayed.
- After the other party answers your call, the display will show the length of the call.




3 When the other party answers, talk into the microphone.

4 To hang up, press .

Handset Digital Speakerphone

For best performance, please note the following:

- Talk alternately with the caller in a quiet room.
- If the other party has difficulty hearing you, press  to decrease the speaker volume.
- If the other party's voice from the speaker cuts in/out during a conversation, press  to decrease the speaker volume.
- While talking, you can switch to the hands-free phone conversation by pressing . To switch back to the receiver, press  or .

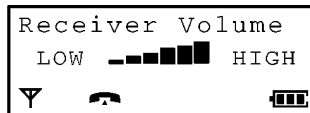
- If "  " flashes and an alarm tone sounds after pressing  or , move closer to the base unit. Then try again.
- You can choose whether to display either the length of the call, call charge or phone number in the talk mode by programming.



4.2.4. To Select The Receiver Volume (HIGH, MEDIUM or LOW) or Speaker Volume (6 levels) While Talking

To increase, press . To decrease, press .

Ex. Receiver volume: HIGH

Speaker volume: level 6

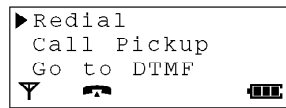



- Each time you press  or , the volume level will change.
- The display will return to the length of the call.

4.2.5. To Redial the Last Number Dialed

1 Press  or .

2 Press .



3 While "Redial" is at the arrow, press .

- The last number dialed is automatically redialed.




4.2.6. To Redial Using the Redial List

The last 10 numbers dialed are stored in the redial list.

1 Press  or .

- The last number dialed is displayed.


2 Press  or  until the desired number is displayed.

- To search from the most recent to the oldest number, press . To search from the oldest to most recent number, press .
- To exit the list, press .

3 Press  or .




- The number is dialed automatically
- If "No Stored Memory" is displayed in step 2, the redial memory is empty.
- If the same phone number is stored in the phonebook, the name will be displayed.

4.2.7. To Store a Redial Number in the Phonebook

While the desired number is displayed, press , then see "To store an entered number in the phonebook", from step 3.

4.2.8. To Clear a Number in the Redial Memory

1 While the desired number is displayed, press .

2 Press  or  until the arrow points to "Clear", then press .

3 Press  or  to select "YES", then press .

4.2.9. To Clear All Numbers in the Redial Memory

Select "All Clear" in step 2 above.

4.2.10. To Store an Entered Number in the Phonebook

- 1 Enter a phone number.
 - The entered number is displayed.
 - If you misdial, press **[C]**. Digits are erased from the right.
 - To cancel, press and hold **[C]** or press **[X]**.
- 2 Press **[▶]**.
- 3 While "Save Phonebook" is at the arrow, press **[▶]**.
 - If the phonebook is locked, enter the 4-digit handset PIN.
 - The display shows the number of remaining phonebook items, then "<Enter Name>".
- 4 Enter a name, up to 16 characters with the dialing buttons, **[◀]** or **[▶]**.
 - See the steps for entering names and symbols.

4.3. Answering Calls

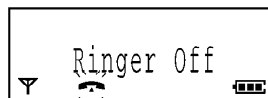
Two external calls can be handled simultaneously by 2 handsets (or by one handset and SLT). The called channel indicator flashes quickly on the base unit when the unit has an incoming call. The channel is automatically selected when you answer the call. You can also program the desired external ringer type.

Make sure that the power is ON, otherwise the handset will not ring.

- 1 Press **[📞]**.
 - You can also answer a call by pressing any dialing button **[0]** to **[9]**, **[X]**, **[▶]** or **[INT]** (Any Key Talk).
- OR
- Press **[📞]** and when the other party answers, talk into the microphone.
- 2 To hang up, press **[X]**.

4.3.1. To Turn the Handset Ringer Off Temporarily

- When the handset starts ringing, press and hold **[▼]**.
- "Ringer Off" is displayed and the handset stops ringing.



- The ringer will turn back on for the next call.
- This function will not work when the handset is on the base unit.

4.3.2. Auto Talk

If you set the Auto Talk feature to ON, you can answer a call by lifting the handset off the base unit without pressing **[📞]** or **[📞]**.

- The handset and base unit will not ring if both ringer volumes are set to OFF.

4.3.3. Display Backlight

The handset has the backlight display. The display will light when you start using the handset,

and when a call is received.

The handset display light will stay on for about 10 seconds after pressing a button or lifting the handset off the base unit.

You can change the backlight color for identifying callers by setting the ring group or the private category feature.

4.3.4. Lighted Handset Keypad

The handset dialing buttons will light when pressing a button, lifting the handset off the base unit or receiving a call.

The lights will go out about 10 seconds after pressing a button, lifting the handset or answering a call.

4.4. Data Communication

4.4.1. Access the Internet

You must make sure the followings before access the Internet.

- The handset and your computer are connected properly.
- The power is ON and the unit is in the standby mode.
- Device driver and network information have been installed successfully.



- The handset display briefly shows the number you are dialing on the second line, then start showing the length of the access time.

5. BLOCK DIAGRAM RF UNIT (BASE UNIT)

Fig. 5-1

6. BLOCK DIAGRAM BASEBAND SECTION AND LINE INTERFACE (BASE UNIT)

Fig. 6-1

7. CIRCUIT OPERATION (BASE UNIT)

7.1. R.F. Section (See [Fig. 5-1](#))

7.2. The Base-Band Section (See [Fig. 6-1](#))

7.2.1. Introduction

The base band section consists of a base-band integrated circuit (BBIC), a Flash PROM, and a SRAM.

7.2.2. The Base-Band Integrated Circuit (BBIC)

The PQVINS14425A (IC13) is a CMOS device designed to handle all the audio, signal and data

processing needed in a DECT base unit. It contains a "burst mode controller" microprocessor which takes care of DECT specific physical Layer and radio section control. It also contains two ADPCM transcoders, a low power 14 bit code (ADC/DAC), various other ADC's, DAC's and timers, a gaussian filter for the DECT GFSK modulation method, clock and data recovery circuits, a clock oscillator circuit, a DTMF generator (DSP), an echo suppression circuit (DSP), and a pair of gain controllable audio amplifiers for line input and line output. The IC13 interfaces to its external PROM (IC15) and external SRAM (IC14) via a data/address/control bus.

7.2.3. Flash PROM (See [Fig. 7-1](#))

The 2 Mbit (IC15) Flash PROM contains the operational firmware for the micro controller. It is interfaced to the data/address/control bus using address lines A0 to A15, data lines D0 to D7, and chip select (pin30), output enable (pin 32), and write (pin 7).

7.2.4. SRAM (See [Fig. 7-1](#))

The 256 kbit (IC14) SRAM works work area for the micro controller. It is interfaced to the data/address/control bus using address lines A0 to A14, data lines D0 to D7, and chip select (pin27), output enable (pin 1), and write (pin 6).

7.2.5. Clock Generation (See [Fig. 7-1](#))

A single clock generator in the BBIC uses an external crystal X3 to derive all clock frequencies used in the base. The crystal is tuned to the exact frequency of 10.368 MHz during manufacture by feeding a DC voltage from a DAC in the micro controller (from pin 14 of IC13) to the varicap diode D26.

The BBIC provide buffered clock signals RFCLK (pin 11) at 10.368 MHz for the Frequency Synthesizer, which is only active during the PLL lock period. Other clock is SCLK on pin 1 (10.368 MHz). The basic data rate for TRADAT and RECDAT is 1.152 Mbit/s, which is 10.368 MHz divided by 9. The data rate for the serial interface to the phase-lock-loop is also 1.152 Mbit/s.

7.2.6. Buzzer Circuit (See [Fig. 7-1](#))

A square-wave signal from IC13 pin 41(TP378) is used to sound the buzzer via switching transistor Q5. Various tones and cadences are used dependent on function.

7.2.7. Analogue Audio Path-RX Audio-Line Input (See [Fig. 7-1](#))

Audio from the Analogue Interface TX AUDIO enters the BBIC on pin 58. R221 and C150 are to balance the (differential) audio input of IC13, and C127 is for RF de-coupling. In the BBIC audio passes through the gain-controlled line input amplifier, into the ADC part of the codec, where it is sampled and turned into digital data. The burst mode controller then processes this raw data (called the B-field) performing encryption and scrambling, adding the various other fields that go together to produce the GAP standard DECT frame, assigning to a time slot and channel etc.

The data then passes through the gaussian filter to emerge on pin22 as TRADAT.

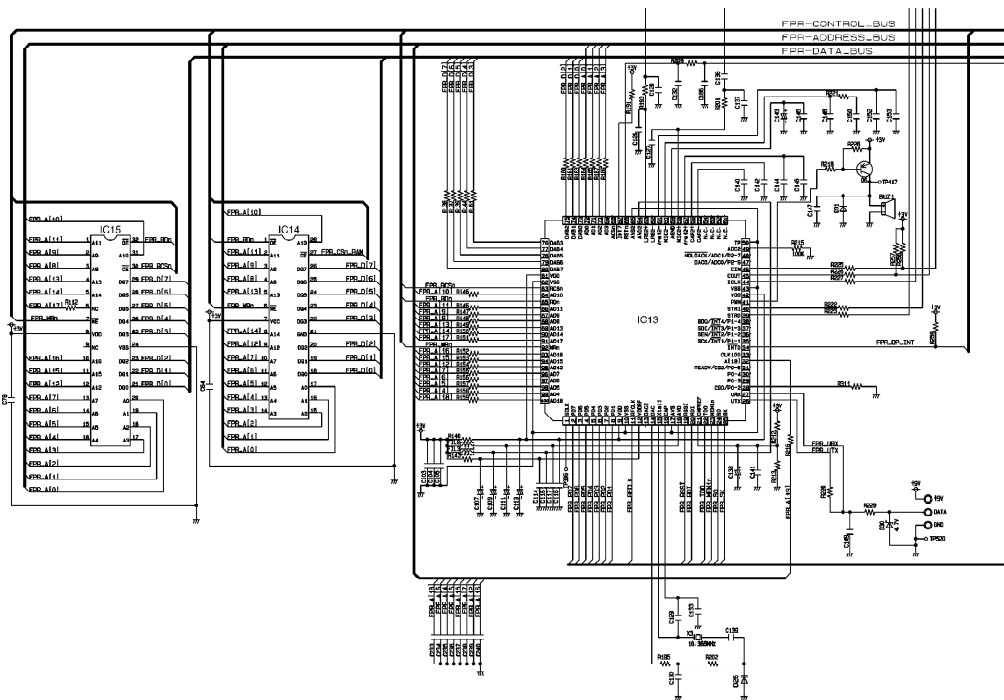
7.2.8. Analogue Audio Path-TX Audio-Line Output (See Fig. 7-1)

Audio from the receiver RECDAT enters the BBIC on pin 20 and passes through the clock recovery circuit. The burst mode controller separates out the B-field data, and performs de-encryption and de-scrambling as required. It then goes to the DAC part of the codec where data is turned back into analogue audio. The gain-controlled line output amplifier amplifies the audio signal, and balanced audio is output on pin 63, and fed as RX AUDIO to the Analogue Interface.

7.2.9. Digital Audio Path (See Fig. 7-1)

BBIC communicates about the digital voice data of ISDN via ISDN transceiver. Digital data has synchronized with ICLK (PIN44), CIN (PIN46) is data output, COUT (PIN45) is data input. The timing synchronization of digital data is taken by STR0 (PIN39) and STR1 (PIN40).

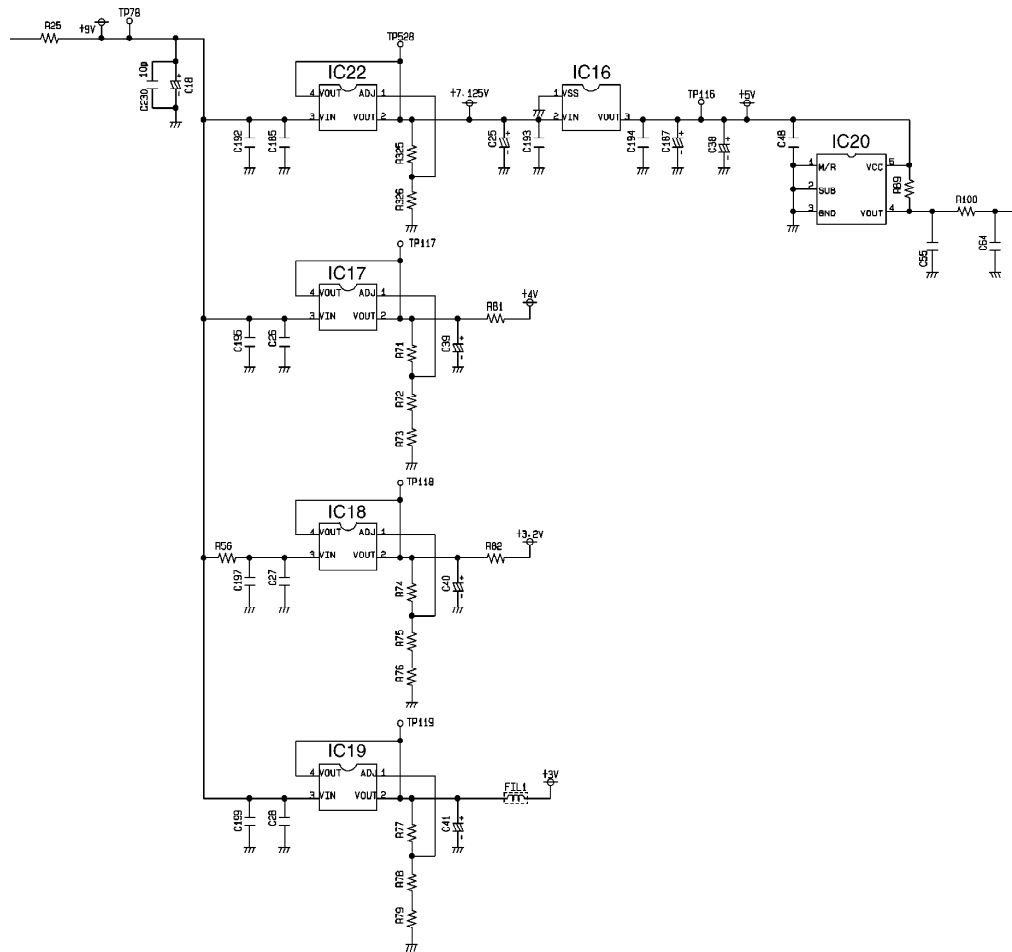
Fig. 7-1



7.2.10. The Power Supplies (See Fig. 7-1, Fig. 7-2)

IC13, IC14, and IC15 are all fed with a +3.0 V supply from the power supply circuit IC19 (TP149). Three separately de-coupled +3.0 V supplies are fed to the BBIC to reduce noise coupling: digital supply (PIN9, 42 and 81, TP149), analogue supply for RF interface (PIN12) and analogue supply of (PIN18 and 64). RF unit needs +4 V supply from the power supply circuit IC17 (TP147) and +3.2 V supply from the power supply circuit IC18 (TP148).

Fig. 7-2



7.3. The Line Interface Section

7.3.1. Introduction

The line interface section consists of a center processing unit circuit (CPU), an ISDN transceiver, a Flash PROM, and a SRAM.

7.3.2. ISDN Line Interface (See [Fig. 7-3](#), [Fig. 7-3a](#), [Fig. 7-3b](#))

ISDN connector (CN1) is connected to S-interface (Basic Rate Interface/BRI). The signal of line is AMI (refer figure [Fig. 7-3a](#) and [Fig. 7-3b](#)). T1 is transformer (1: 2/CN1 side: IC5 side). IC5 is ISDN-transceiver. It includes the S-transceiver (Layer 1), an HDLC controller for the D-channel and two protocol controllers for each B-channel. This IC is controlled by IC1 (CPU), B-channel data is communicated by IC13 (BBIC) both direction.

Fig. 7-3

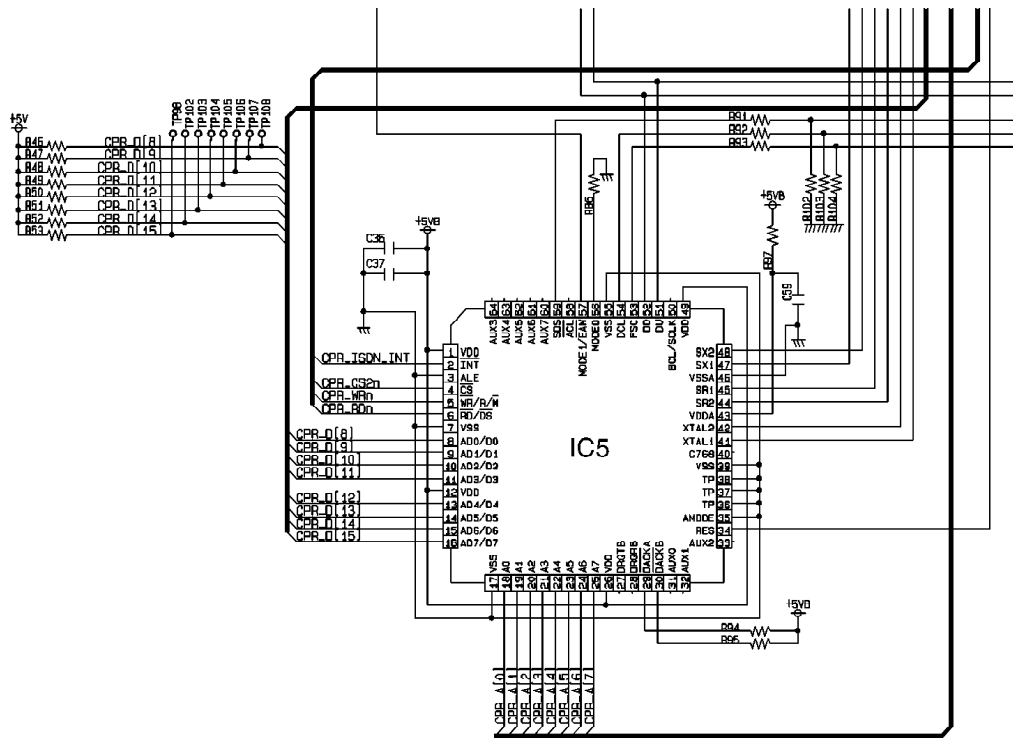


Fig. 7-3a

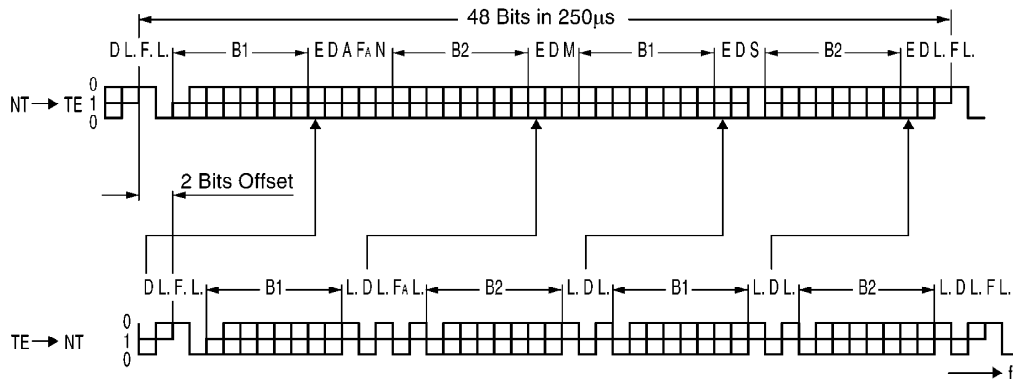
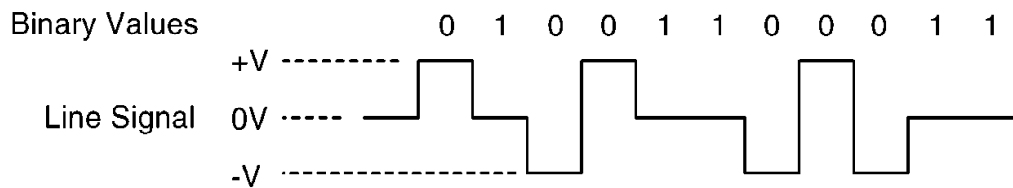


Fig. 7-3b



7.3.3. The Center Processing Unit Circuit (CPU)

The PQV12340FA20 (IC1) is a microcomputers (MCUs: microcomputer units), and equipped with peripheral functions on-chip. On-chip peripheral functions required for system configuration include data transfer controller (DTC) bus masters, 16-bit timer-pulse unit (TPU), 8-bit timer, watchdog timer (WDT), serial communication interface (SCI), A/D converter, D/A converter, and I/O ports. It controls ISDN Line Interface, communicate between CPU and BBIC, Incoming call, and Subscriber Line Interface Circuit.

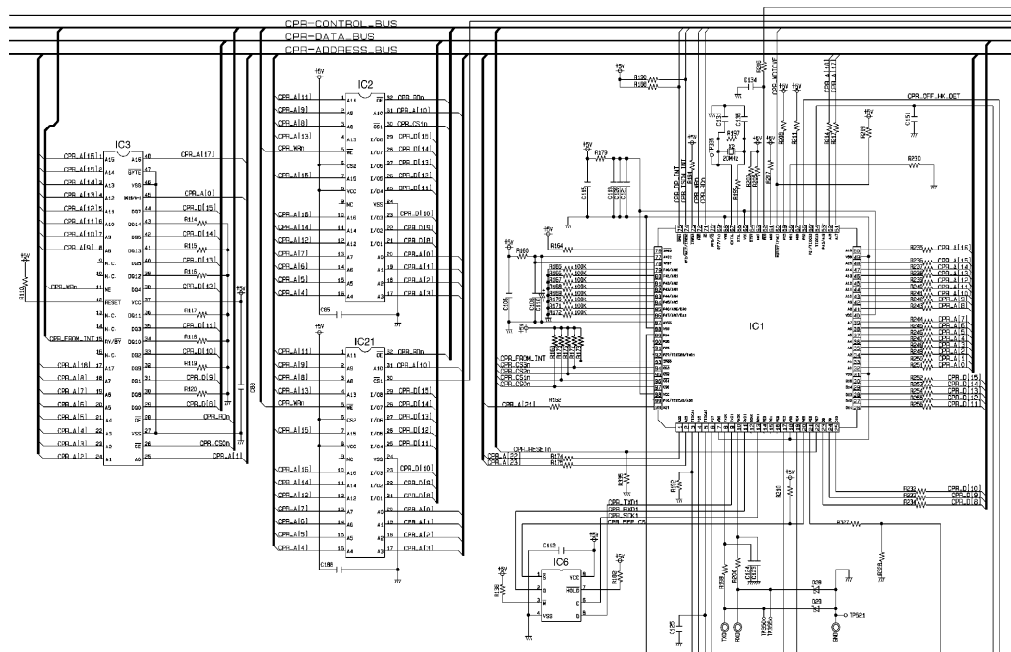
The IC1 interfaces to its external PROM (IC3) and external SRAM (IC2) and (IC21) via a data/

address/control bus.

7.3.4. Flash PROM (See Fig. 7-4)

The 4 Mbit (IC3) Flash PROM contains the operational firmware for the microprocessor. It is interfaced to the data/address/control bus using address lines A0 to A18, data lines D8 to D15, and chip select (pin 25), output enable (pin 28), and write (pin 11).

Fig. 7-4



7.3.5. SRAM (See Fig. 7-4)

The 1 Mbit (IC2) and (IC21) SRAM works work area for the microprocessor. It is interfaced to the data/address/control bus using address lines A0 to A16, data lines D8 to D15, and chip select (pin 30), output enable (pin 32), and write (pin 5).

7.3.6. EEPROM (See Fig. 7-4)

The electrically erasable PROM (IC6) is used to store all the temporary operating parameters for the base. The memory is accessed via a simple Serial Peripheral Interface (SPI) compatible serial bus. The bus signals required are a clock input pin 6 (SCK) plus separate data in pin 5 (SI) and data out pin 2 (SO) lines. Access to the device is controlled through a chip select pin 1 (CS) input.

7.3.7. Factory Serial Port (See Fig. 7-4)

In order to communicate with the handset during manufacture and servicing (using a PC) a serial data link has been provided. Serial data receive is provided on TP355, transmit is provided

on TP350, and a ground is provided on TP521. The bi-directional serial data line is connected to IC1 pin 10 (receive) and pin 8 (transmit). Data rate is 38.4Kbps. D28 and D29 provide ESD protection.

7.3.8. The Gate-Array Circuit (See Fig. 7-5)

The PQVIMS30R830 (IC7) is a CMOS device designed to handle data processing between BBIC and CPU. It also contains memory for data processing between BBIC and CPU, semaphore logic, interrupt logic, extension I/O port logic, system reset logic, address decoder, and exchange voltage logic (5 V <-> 3 V).

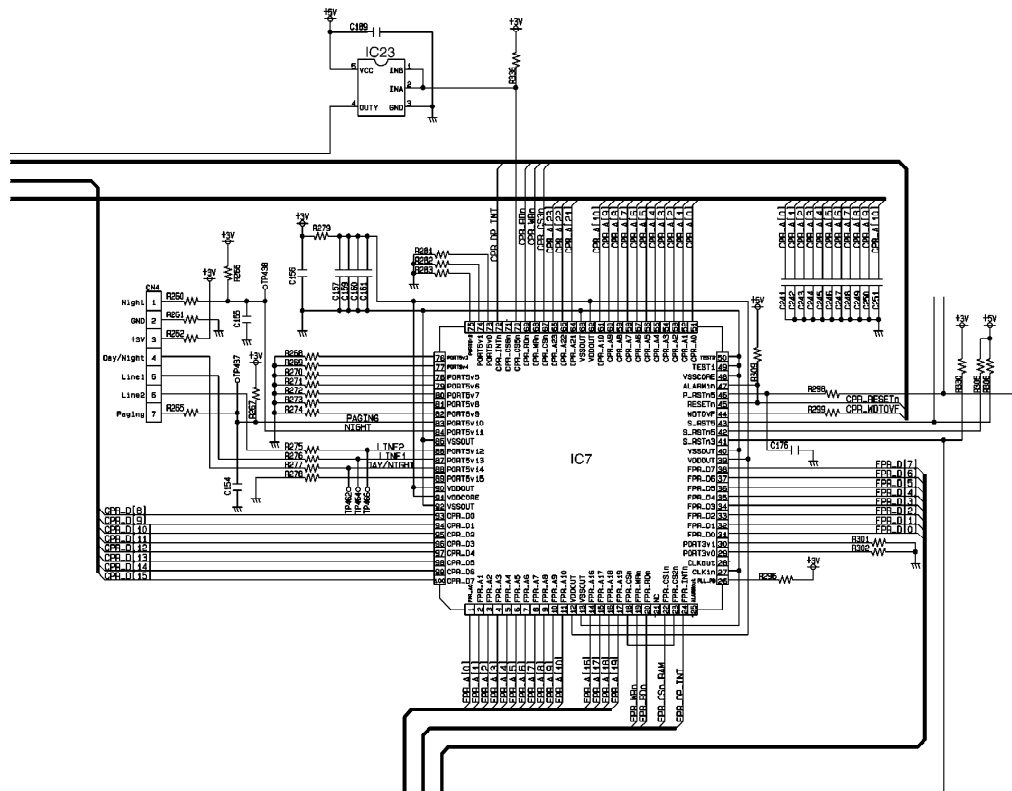
7.3.9. Day and Night Key (See Fig. 7-5)

The keyboard "Day and Night Key (Day/Night)" button is connected to pin 88 of the IC7. When pressed the mode changes to Night Mode that the incoming form is different and Red LED (D502) light.

7.3.10. Locator Key (See Fig. 7-5)

The keyboard "Locator (Page)" button is connected to pin 83 of the IC7. When pressed the base transmits a message to the handset, which then beeps.

Fig. 7-5



7.3.11. The Power Supplies (See [Fig. 7-5](#), [Fig. 7-2](#))

The 9V supply from the AC Adaptor is connected via CN3 pin1 (TP912) +9 V, and CN3 pin2 (TP11) ground. The unregulated +9 V supply is fed to the first regulator. This regulator IC22 provides a regulated output pin2 (TP528) of +7.15 V (called +7 V). The second regulator IC16 is fed with +7 V and provides the stable +5.0 V supply (TP116). During power-up (until +4.2 V), IC20 generates a RESET signal (TP169) which is used to reset the CPU and GA.

7.4. The Analogue Interface Section

7.4.1. Introduction

The analogue interface section consists of a subscriber line interface circuit (SLIC), and an operational amplifier.

7.4.2. The Subscriber Line Interface Circuit (SLIC) (See [Fig. 7-6](#))

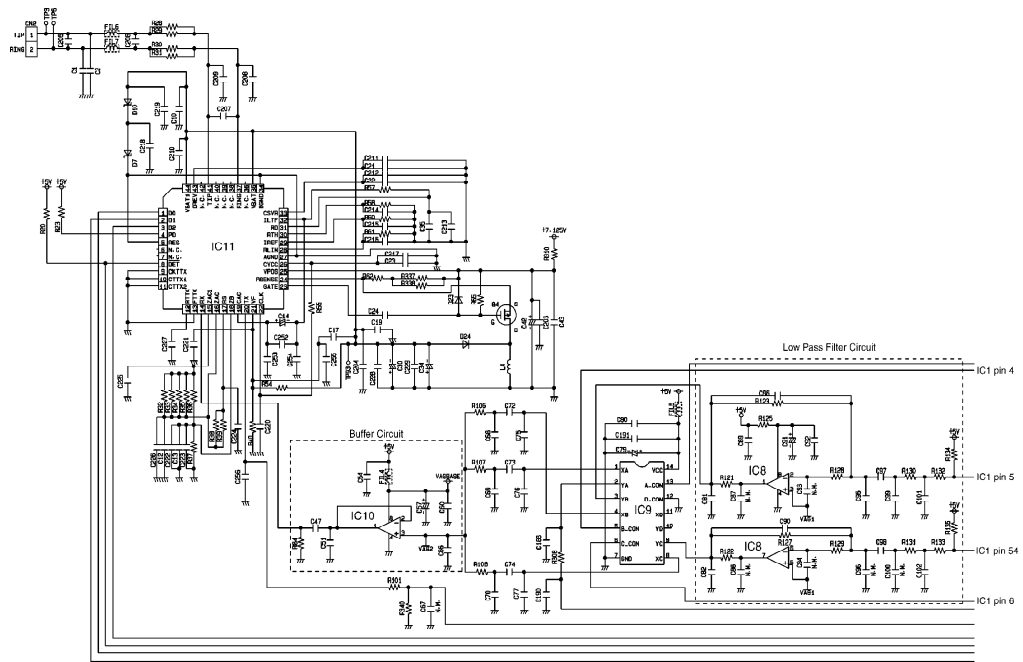
The PQVITLC3055QTR (IC11) is a SLIC device specifically de-signed ISDN-Terminal Adaptors, and equipped with peripheral functions on-chip. On-chip peripheral functions required for system configuration include DC/DC converter controller that drives an external MOS switch, off-hook detector, on-hook transmission, ringing, ring trip, and programmable constant current feed. Analogue telephone signal is connected to PIN 41 (TIP) and PIN 37 (RING) of IC11 via analogue protection circuit. That signal is exchanged from 2 line (TIP, RING) signal to 4 line signal (RX-GND, TX-GND) with an internal circuit, and output from PIN14 (RX) and PIN20 (TX).

7.4.3. The Tone Signal Circuit (See [Fig. 7-6](#))

This composed of the CPU PQVI2340FA20 (IC1) and the analog switch PQVIMC74066TT (IC9) and the low pass filter circuit and the buffer circuit.

This system has four different tones, 350 Hz, 440 Hz, 480 Hz, 620 Hz. The PQVI2340FA20 (IC1) pin 5 supplies the 350 Hz and 480 Hz square wave signals, and these square wave signals are shaped by the low pass filter to sin wave signals and become tone1 and tone2. The PQVI2340FA20 (IC1) pin 54 supplies the 440 Hz and 620 Hz square wave signals, and these square wave signals are shaped by the low pass filter to sin wave signals and become tone3 and tone4. At the analog switch PQVIMC74066TT (IC9) tone signals (tone1, tone2, tone3, tone4) are turned ON / OFF by the signals from the PQVI2340FA20 (IC1) pin4 and pin6 to make single tone (620 Hz) and dual tone (350 Hz + 440 Hz, 440 Hz + 480 Hz), and buffered at the buffer circuit. Thus dial tone, busy tone, and other tones are produced.

Fig. 7-6



7.5. Battery Charger (See **Fig. 7-7**)

The 9 V supply from the AC Adaptor is connected via CN3 pin 1 (TP12) positive, and CN3 pin 2 (TP11) negative. It consists of the 10 pieces of resistance (R312, R313, R314, R315, R316, R317, R318, R319, R323, R324, R341, R342).

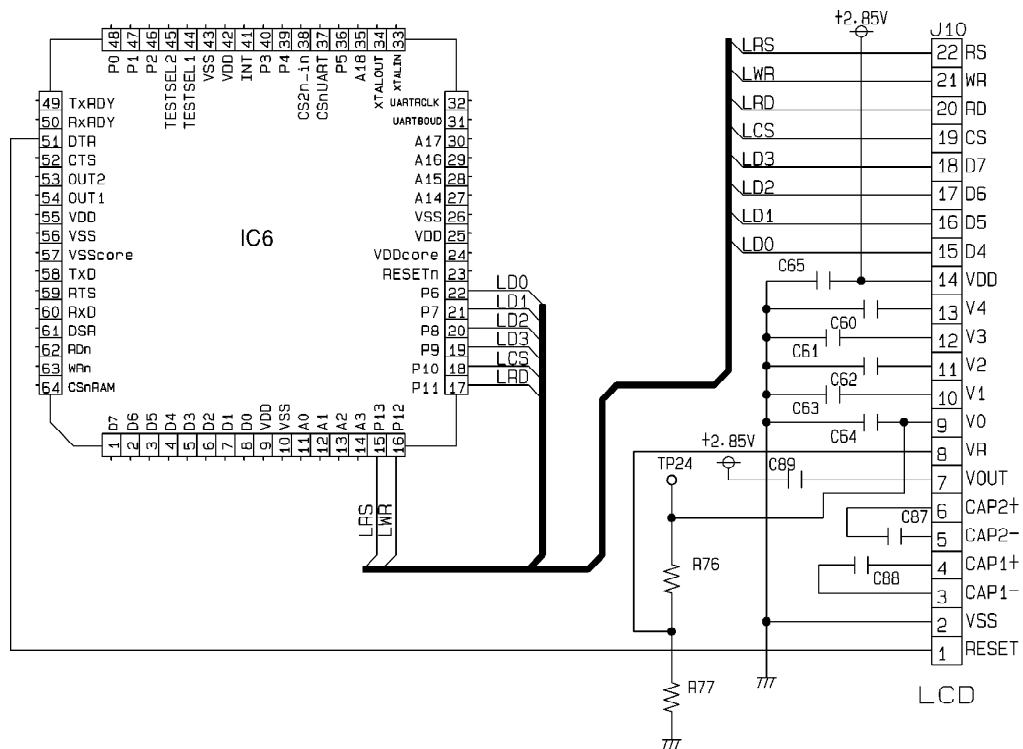
Fig. 7-7

amplifiers for microphone and ear piece, general purpose ADCs, DACs, timers, UART, voltage converter control circuit, two voltage regulator control circuits, clock oscillator circuit, gaussian filter for the DECT GFSK modulation, clock and data recovery circuits, and 320 kbits flash memory for program and 4 kbits EEPROM for data.

Fig. 10-1

10.2. LCD Display (See [Fig. 10-2](#))

Fig. 10-2

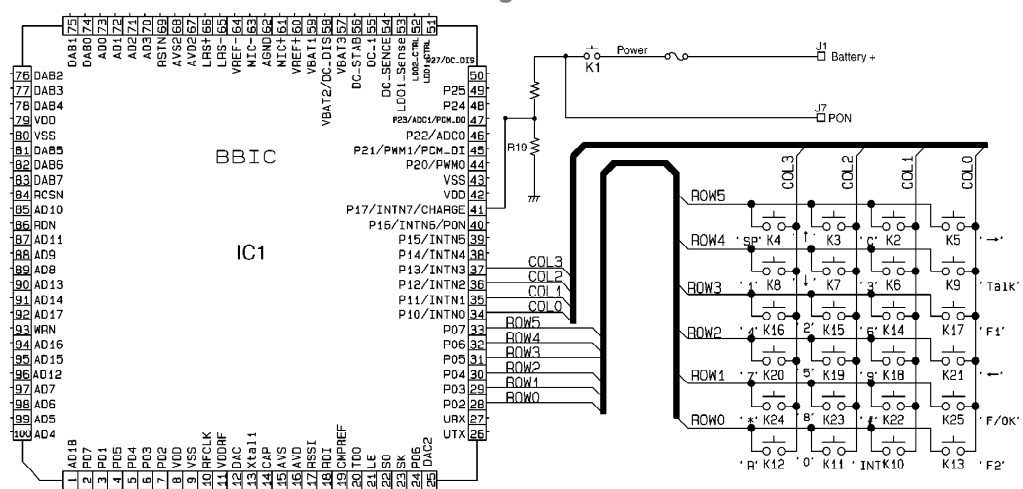


10.3. Keypad (See Fig. 10-3)

The keypad "Talk Off" is also power key, is connected directly to pin 40 of BBIC. When pressed it turns handset on and off (must be held little time). All other keys are connected in a row/column matrix circuit. They are scanned in a six rows using scan from IC1 pin 28 to 33. The four matrix columns are input to the BBIC on pin 31-34.

Rows pulse are only active for the moment when any keys are pressed, in other time wait interrupt for columns.

Fig. 10-3



10.4. Audio Path - TX Audio (See [Fig. 10-4](#))

Balanced audio from the microphone (TP10 and TP11) enters the BBIC at pins 61 and 63. A balanced bias voltage for the ("electret" type) microphone is supplied by the BBIC from pins 60 and 64 via R35 and R36. This supply is de-coupled by R33, R34, C41, C44, and C43. RF de-coupling of the microphone signal is provided by R28, C34, R29, C35, R103, R104, and C104, C105.

The microphone audio signals are coupled to the BBIC via C28 and C32, which provide some high pass filtering.

In the BBIC audio passes through the gain-controlled microphone amplifier, into the ADC part of the codec, where it is sampled and turned into digital data. The burst mode controller then processes this raw data (called the B-field) performing encryption and scrambling, adding the various other fields that go together to produce the GAP standard DECT frame, assigning to a time slot and channel etc. The data then passes through the gaussian filter to emerge on pin 20 as TX-DATA.

10.5. Audio Path - RX Audio (See [Fig. 10-4](#))

Audio from the receiver RX-DATA enters the BBIC on pin 18 and passes through the clock recovery circuit. The burst mode controller separates out the B-field data, and performs de-encryption and de-scrambling as required. It then goes to the DAC part of the codec where data is turned back into analogue audio. The audio signal is amplified by the gain-controlled ear piece amplifier, and balanced audio is output on pins 65 and 66, and fed to the ear piece (TP6 and TP7). The leads feeding the ear piece are RF de-coupled by C19 to R20, C22, C21, R21, and C23, C24. C95 provides low pass filtering.

10.6. Audio Path of Headset - TX Audio (See [Fig. 10-4](#))

When the headset plug is inserted in Jack, the handsets microphone is cut off. Audio from the headset jack (jack pin 2) enters the BBIC at pins 61. A balanced bias voltage for the ("electret" type) microphone is supplied by the BBIC from pins 60 via R35.. This supply is de-coupled by R33, C41, and C43. RF de-coupling of the microphone signal is provided by R28, C34, R103, and C104, C105, C37, C39.

The headset audio signals are coupled to the BBIC via C28 and C32, which provide some high pass filtering.

In the BBIC audio passes through the gain-controlled microphone amplifier, into the ADC part of the codec, where it is sampled and turned into digital data. The burst mode controller then processes this raw data (called the B-field) performing encryption and scrambling, adding the various other fields that go together to produce the GAP standard DECT frame, assigning to a time slot and channel etc. The data then passes through the gaussian filter to emerge on pin 20 as TX-DATA. When the headset plug is inserted in Jack, the emitter of Q7 is changing from 0V to 2.8 V. When it is detected, the BBIC switches the TX audio gain.

10.7. Audio Path of Headset - RX Audio (See [Fig. 10-4](#))

When the headset plug is inserted in Jack, the handsets receiver is cut off. Audio from the

receiver RX-DATA enters the BBIC on pin 18 and passes through the clock recovery circuit. The burst mode controller separates out the B-field data, and performs de-encryption and de-scrambling as required. It then goes to the DAC part of the codec where data is turned back into analogue audio. The audio signal is amplified by the gain-controlled ear piece amplifier, and unbalanced audio is output on pins 65, and fed to the headset jack (jack pin 5). The leads feeding the headset are RF de-coupled by C21, R21, and C23, C24, C95 C93, L5, C82, C100 provides low pass filtering.

When the headset plug is inserted in Jack, the emitter of Q7 is changing from 0 V to 2.8 V. When it is detected, the BBIC switches the RX audio gain.

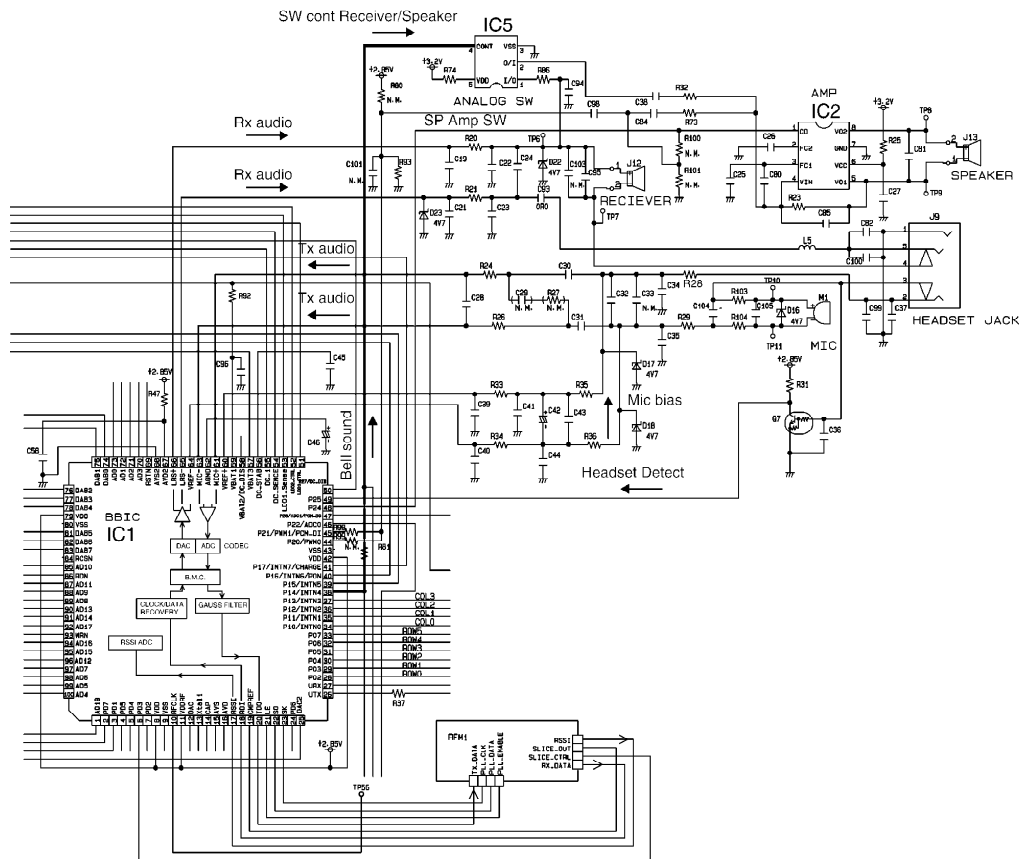
10.8. Audio Path of SP Phone - TX Audio (See [Fig. 10-4](#))

Same as Audio Path of SP Phone - RX Audio (See Fig. 10-4).

10.9. Audio Path of SP Phone - RX Audio (See [Fig. 10-4](#))

Audio from the receiver RX-DATA enters the BBIC on pin 18 and passes through the clock recovery circuit. The burst mode controller separates out the B-field data, and performs de-encryption and de-scrambling as required. It then goes to the DAC part of the codec where data is turned back into analogue audio. The audio signal is amplified by the gain-controlled amplifier, and audio is output on pin 65, and fed to the IC5 (Pin 1). The IC5 is an analog switch. IC2 is active when SP phone mode and ringing bells or tones. When speaker is selected, Pin4 becomes 2.8 V, then Analog SW ON. Audio signal from the IC5 pin 2 enters the IC2 on pin 4. The IC2 is a speaker amplifier. IC2 is active when SP phone mode and rising bells or tones. When amplifier is ON, Pin 1 becomes 2.8 V. Audio signal from R32 and Ringer signal from R73 are added and amplified, then output to the speaker.

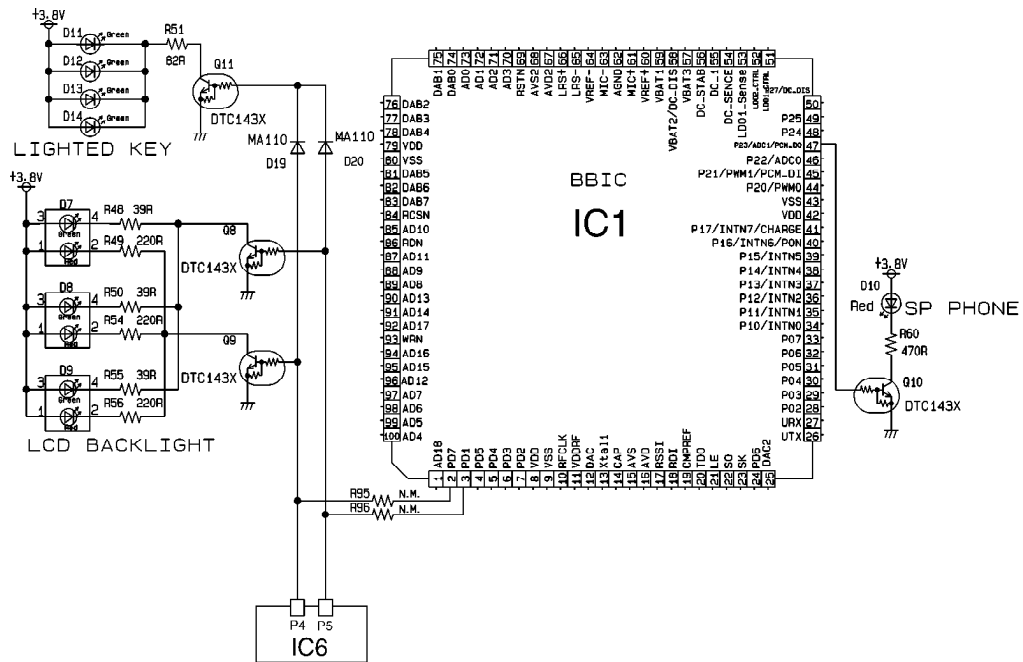
Fig. 10-4



10.10. LED Circuit (See Fig. 10-5)

When the any keys are pressed, LIGHTED KEY LED (D11, D12, D13, D14) and LCD BACKLIGHT (D7, D8, D9) turn on light. LCD BACKLIGHT has three color modes (Green, Orange, Red). When Green mode, the ASIC (PIN 39 IC6) turns Tr Q8 on. When Red mode, the ASIC (PIN 36 IC6) turns Tr Q9 on. When Orange mode, the BBIC turns both Q8 and Q9 on. During SP Phone mode, the BBIC (PIN 47 IC1) turns Tr Q10 on, then SP PHONE LED (D10) is turning on light.

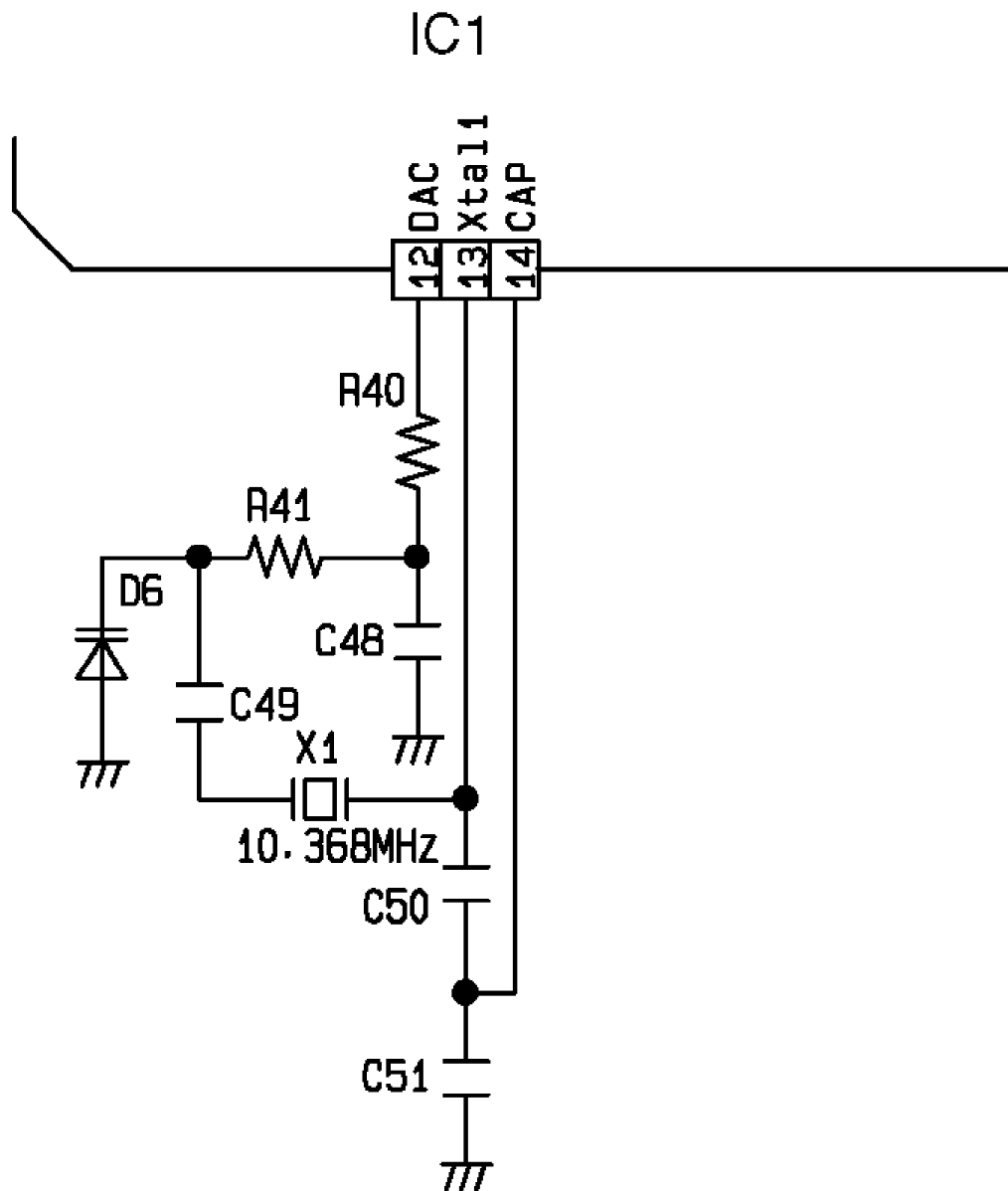
Fig. 10-5



10.11. Clock Generation (See Fig. 10-6)

A single clock generator in the BBIC uses an external crystal X1 to derive all clock frequencies used in the handset. The crystal is turned to the exact frequency of 10.368 MHz during manufacture by feeding a DC voltage from an internal DAC (from pin 12) to the varicap diode D6. The RFCLK output (pin 10) is a buffered clock signal at 10.368 MHz for the Frequency Synthesizer, that is only active during the PLL lock period. The basic data rate for TX-DATA and RX-DATA is 1.152 Mbits/s, which is divided by 9. The data rate for the serial interface to the phase-lock-loop is also 1.152 Mbits/s.

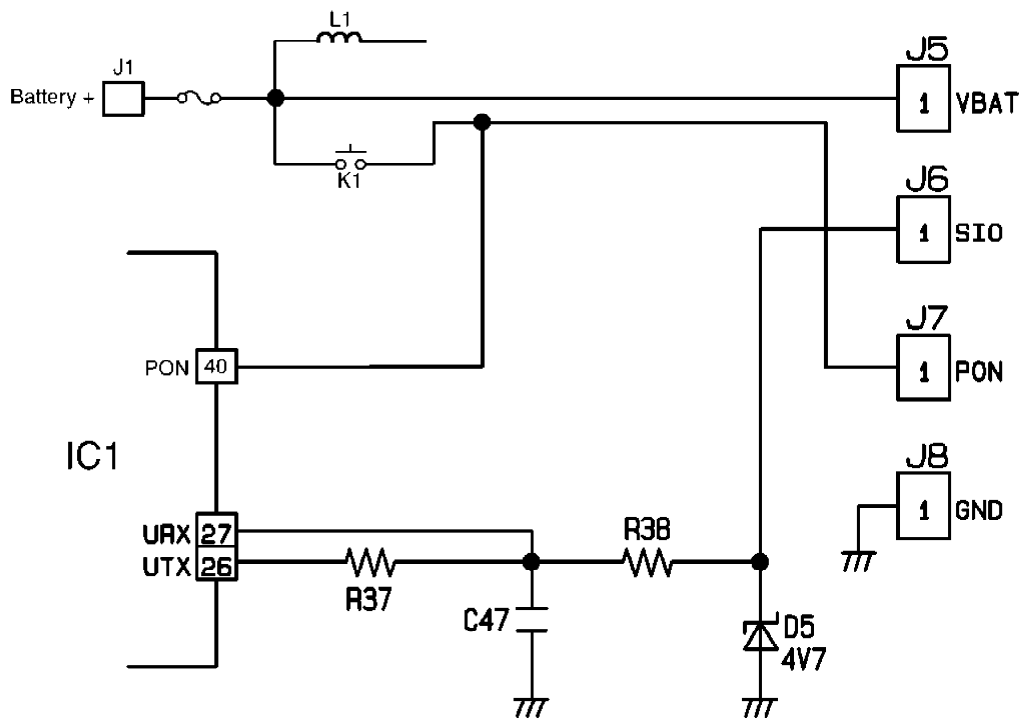
Fig. 10-6



10.12. Factory Serial Port (See [Fig. 10-7](#))

In order to communicate with the handset during manufacture and servicing (using a PC) a serial data link has been provided. Serial data input/output is provided on J6, and a ground is provided on J8. The bi-directional serial data line (half-duplex) is split into two at IC1 pin 27 (input) and pin 26 (output) by R37. Data rate is 9600 Baud or 115.2 k Baud. D5 and R38 provide ESD protection, and C47 provides RF de-coupling.

Fig. 10-7

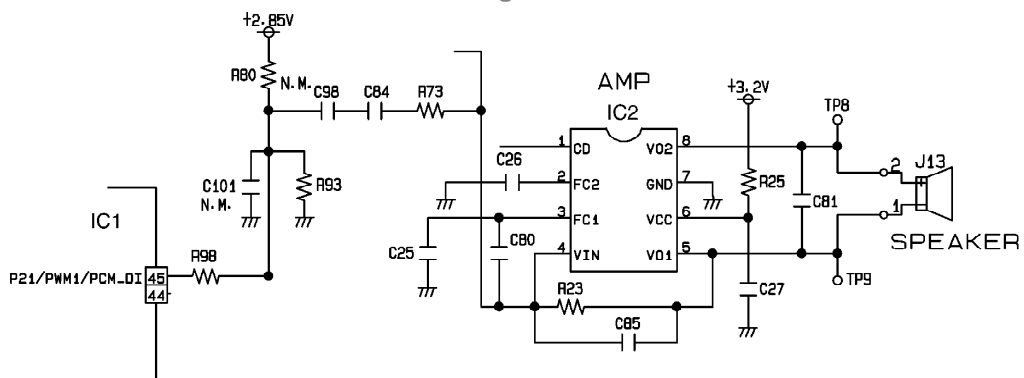


J5 can use the power supply (2.6 V) instead of battery, and J7 can use the power key by connecting to J5.

10.13. Ringer Circuit (See [Fig. 10-8](#))

A square-wave signal from IC1 pin 45 is used to sound the speaker via audio amp IC2. Various tones and cadences are used dependent on function. Speaker volume is varied by changing the duty cycle of the square-wave signal.

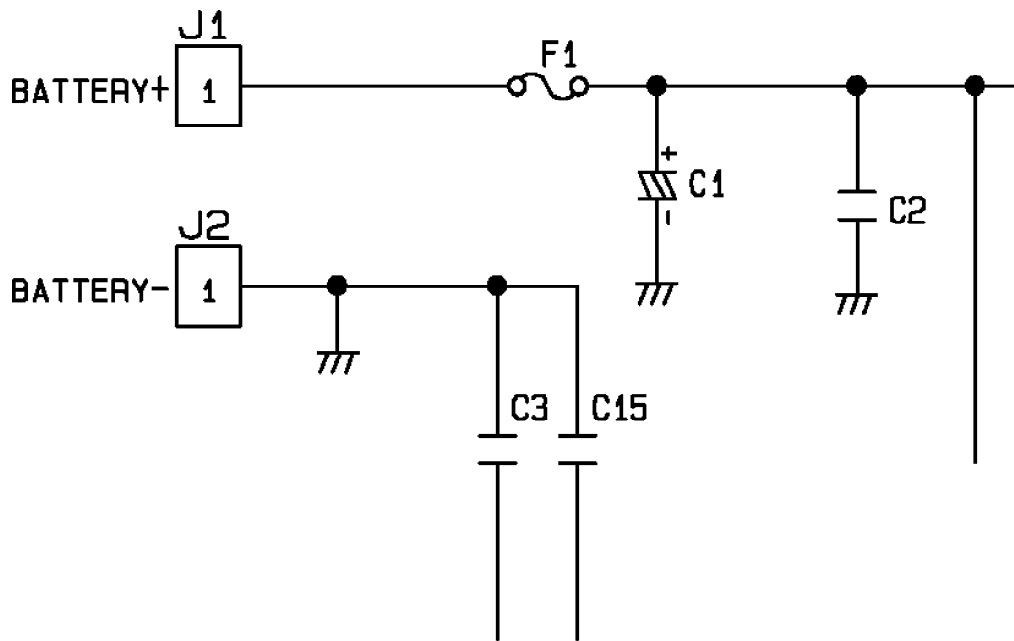
Fig. 10-8



10.14. Battery Supply (See [Fig. 10-9](#))

The two cell NiMH rechargeable battery supplies the handset via 2 A fuse (actually a coil), and is de-coupled by C1 and C2. It supplies L1 and IC1 (de-cupled by R92 and C96).

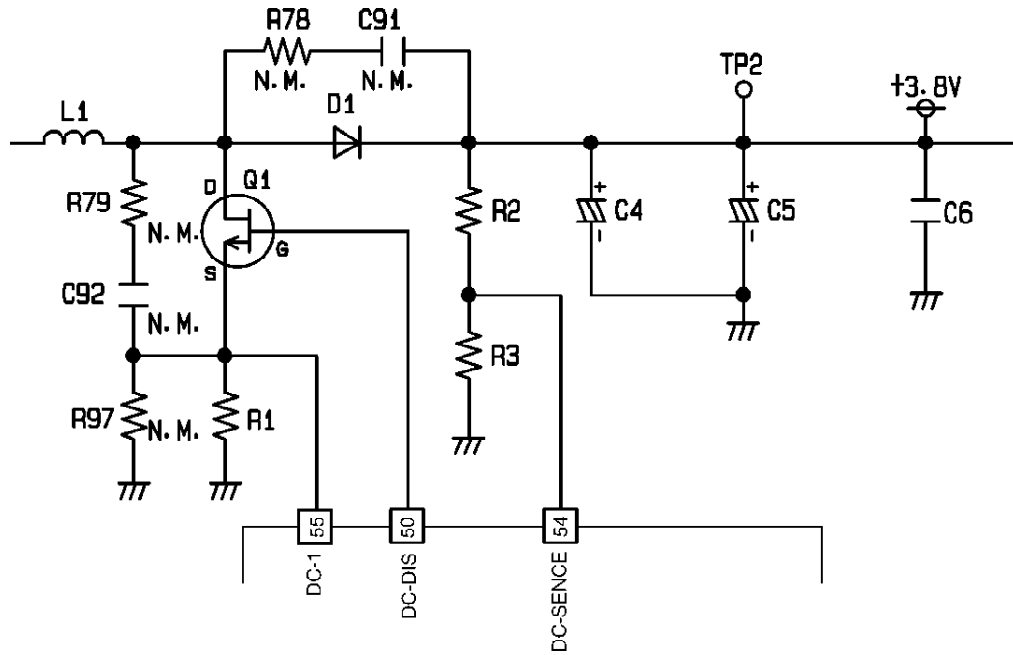
Fig. 10-9



10.15. DC-DC Converter (See [Fig. 10-10](#))

A FET transistor Q1 is turned on and off at rate of 115 kHz, related to the DECT system clock, BBIC controls Gate (Q1) such as the input to PIN54. IC1 is equal to 1.225 V. R1 is the resistor to limit output current. When the switch is on, the current in the inductor L1 charges up at rate of VBAT / L1, storing current in the inductor. When the switch turn off, the right end of L1 flies above VBAT, discharging its current through the D1 into the C4 and C5. The +3.8 V supplies voltage regulator (Q2, Q3) and RF Section (VCC_PA). It also supplies LIGHTED KEY LED (D11, D12, D13, D14), SP PHONE LED (D10), and BACKLIGHT LED (D7,D8,D9)

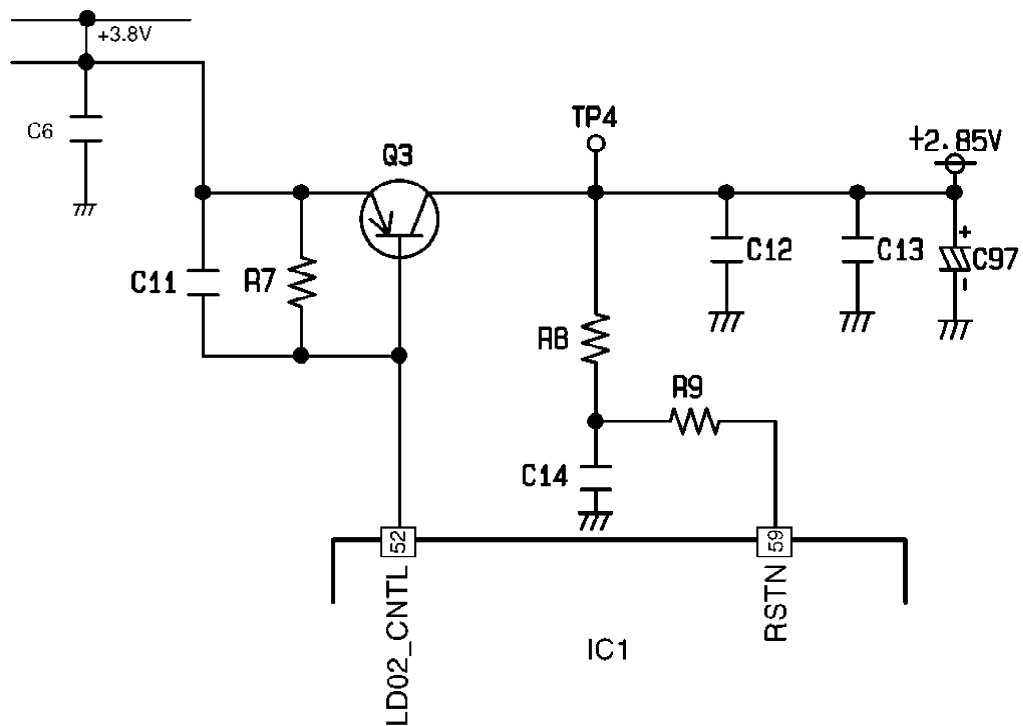
Fig. 10-10



10.16. Main 2.85 V Regulator (See [Fig. 10-11](#))

The BBIC measures the battery voltage on pin 59 using an internal ADC. The BBIC controls base (Q3) as input to PIN 59 equal to 2.85 V. R8, C14 and R9 provide a reset pulse used for resetting the BBIC when power on. The +2.85 V supply is fed to the BBIC and Display Driver.

Fig. 10-11

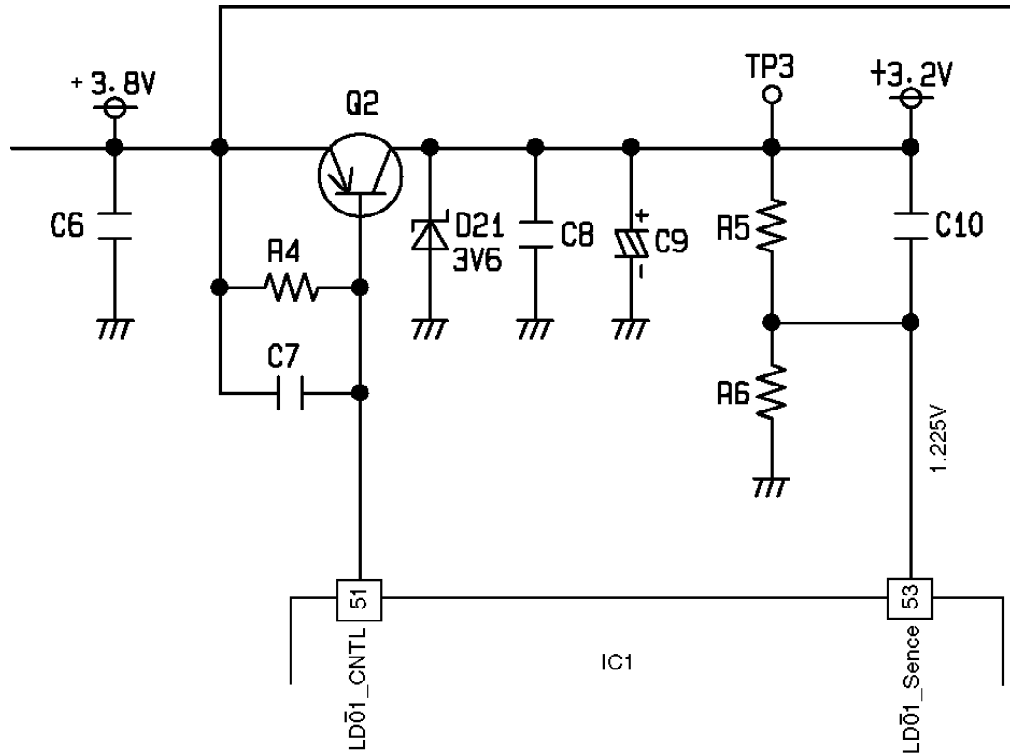


10.17. 3.2 V Regulator (See [Fig. 10-12](#))

The output voltage of Q3 is set by two resistor (R5 and R6). The BBIC controls base (Q2) as input to PIN 53 equal to 1.225V.

The +3.2 V supply is fed to the IC2, IC5, and RF Section (VCC_OC) (de-cupled by R102, C90, and C102).

Fig. 10-12



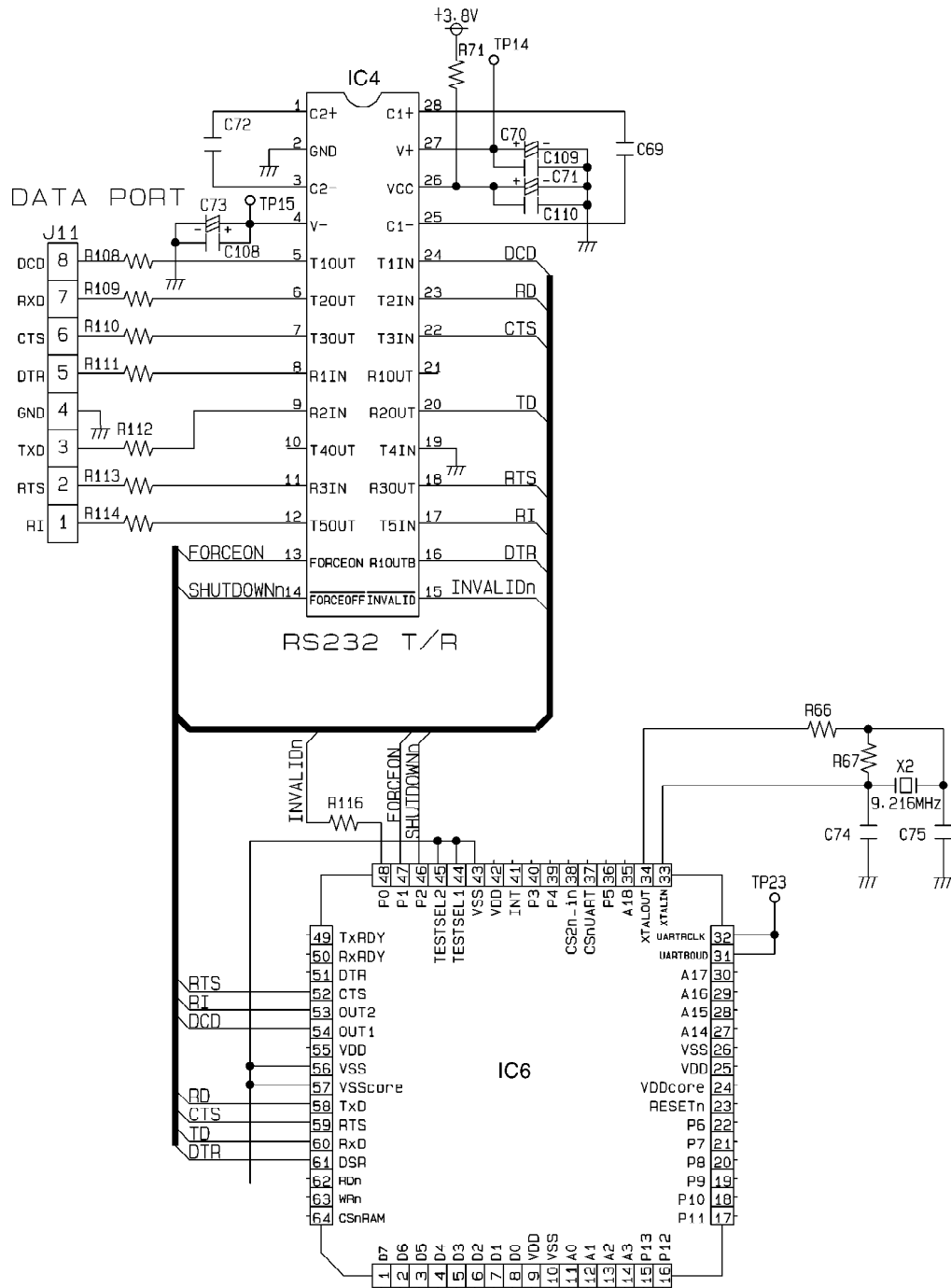
10.18. Battery Charging Circuit (See Fig. 10-13)

The charge circuit is designed to operate with a changeable charge current from the Base unit or Charger. The Charge Current from the Base unit or Charger is turned ON and OFF by Q4 using control signal from the BBIC (PIN39 IC1) via Q5.

And depend on the amount of charge current, BBIC control rate of ON and OFF. To detect the amount of charge current, BBIC monitors the voltage difference between R85 using 2 signal. One signal is VBAT1(PIN40 IC1) which is provided from R18 and R19 and another is ADC2(PIN25 IC1) which is provided from Q12, Q13, R83 and R84. R92 and C96 provide low pass filtering.

L1 and L2 are countermeasure for electric-static discharge (ESD). R11 provides the initial current when Q4 is turned OFF and the case of just start charging in order to make realize the BBIC the charging. And D2 and D15 protect against the high voltage during the charging without Battery in the Handset. R14 and R16 provide the signal for the BBIC (PIN41 IC1) to detect Handset is on the cradle. Therefore when the user put on the Handset on the cradle with Power Off, even if the Handset is off, it will be power on automatically and it will start charging. (In that case user can only see the Battery picts on the LCD display even power is on) And R13 and D3 are for making handset start charging the case of the Battery is Over-discharged.

ASIC(IC6) include Universal Asynchronous Receiver—Transmitter(UART) with 128 bytes FIFO for both(Tx & Rx) direction. It works as DCE (Data circuit terminating equipment) looks like modem, and is available 115k bps maximum for bit rate. Data clock is generated by divided from 9.216MHz Ceraock(X2).RS232T/R(IC1) include charge pump circuit it make RS232 level voltage(+7.5V, -7.5V) from 3.8V. And RS232T/R convert signal level from TTL to RS232 and opposite. Data port connector (J11) is not complied with requirement, so it is connect to PC with dedicated cable.



11. ADJUSTMENT (BASE UNIT)

Tools required for adjustments

- Frequency counter
- Personal computer
- Serial communication tool
- Test software (batch files)
- Line simulator

- Oscilloscope
- Audio level meter

Personal Computer Setting

- Windows 95/98/2000
- “Hyper Terminal” Com 1 Direct 19200 bps, 8 bit, Non parity, Stop bit 1, No Flow Control

11.1. EEPROM (IC6) setting for country (Base Unit)

Input EPW command directly by using hyper terminal.

(Ex) EPW 02 88 2 cc cc

02 88 : address

2 : byte

cc cc : EEPROM Setting code for Country (see below)

Name	Address	Size(Byte)	Greece GR
ISDN Network Type	021C	1	08
Emergency call 1 Length	021E	1	00
Emergency call 1 Dial Number	0220	2	FF FF
Emergency call 2 Length	0228	1	00
Emergency call 2 Dial Number	022A	2	FF FF
Emergency call 3 Length	0232	1	00
Emergency call 3 Dial Number	0234	2	FF FF
Emergency call 4 Length	023C	1	00
Emergency call 4 Dial Number	023E	2	FF FF
ISDN CODEC Type	0284	2	20 40
CLIP/COLP Prefix (International)	0287	1	AA
CLIP/COLP Prefix (National)	0288	1	AF
ISDN T302 Timer	028E	2	00 96
ISDN T303 Timer	0290	2	00 28
ISDN T304 Timer	0292	2	01 2C
ISDN T305 Timer	0294	2	01 2C
ISDN T306 Timer	0296	2	00 00
ISDN T310 Timer	0298	2	03 E8

ISDN T3D3 Timer	029A	2	02 58
ISDN T3D9 Timer	029C	2	00 C8
Country Code	06D0	1	01
CODEC/Pulse Type	06D1	1	80
Numbering Plan Table No.	0748	1	01

11.2. Clock Frequency Adjustment

Adjustment item	Symptom	Remedy
Clock frequency	Synchronization with the portable handset is lost immediately. No link is established.	Perform the adjustments described in item (1).

Item(1)

1. Connect the serial link to test computer to TP350 (TXD), TP355 (RXD) and TP521 (GND).
2. Connect the AC adaptor.
3. Connect the frequency counter to TP306 (SCLK) and TP521 (GND).
4. Send “CLK **” to set the clock frequency. The default value is B6. Increase the value to increase the frequency. The clock frequency must be 10,368,000 Hz \pm 4 Hz.

12. ADJUSTMENT (HANDSET)

Adjustment objectives

Adjustment items	Symptom	Remedy
Clock frequency	It cannot be established the link with base unit. The link will be lost immediately.	Perform the adjustments described in item(1).
High/Low/Stop battery	The standby/talk time are short. The battery alarm will be beeping too long or too short. The unit will shut down at once.	Perform the adjustments described in item(2).
Charge current reference	Even though handset is on cradle for long time, the battery wouldn't be charged enough.	Perform the adjustments described in item(3).
RSSI	Synchronizution cannot be established.	Perform the adjustments described at item(4).

Required tools for adjustment

- Frequency counter
- DECT TESTER
- Power supply unit (DC 3 V - 5 V, 1 A)
- Personal computer
- Serial communication cable
- Test software (BATCH-Files)
- Battery AA *2

Item(1): Clock Frequency

1. Connect the Serial Cable between PC and J6(Serial I/O), J8(GND) at Test unit.
2. Turn off the power of base unit.
3. Input +2.5 V to J5(+) and J8(GND) at test unit.
4. Connect the Frequency Counter to TP13(CLK) and J8(GND).
5. Press the Power ON Key.
6. Run the Batch File "MCLK.Bat".
7. You can see the current CLK setting at PC Display. (Refer to **Fig. 12-1**)
[The Default Value of CLK setting is 0x80.]
8. Measure the CLK Frequency by using Frequency Counter.
9. If it's not within the Limit, run "MCLK XX" (XX is the value

supposed to change) to change the CLK setting value. (Refer to **Fig. 12-2**)

[The Clock Frequency must be 10.368 MHz +/-0.010 kHz]

Fig. 12-1

```
C:\¥ISDN>MCLK

C:\¥ISDN>

80    OK
C:\¥ISDN>
```

Fig. 12-2

```
C:\¥ISDN>MCLK B1

C:\¥ISDN>
        OK
        OK
B1      OK
```

****How to adjust:** To increase the Frequency, increase the CLK setting Value. And To decrease, decrease the Value.

Item(2): High/Low/Stop Battery

- 1. Connect the serial cable between PC and J6(Serial I/O) and J8(GND) at Test unit.**
- 2. Input +2.5 V to J5(+) and J8(GND) at test unit as Battery Voltage.**
- 3. Press the Power Key.**
- 4. Run Batch file "BATSET 0"**
- 5. Set the Battery Voltage to 3.25 V at J5 and J8.**

6. Run Batch File "ADC1.Bat". The returned value is 0xB1.
7. Run Batch File "WRTBAT1 B1". (Refer to [Fig. 12-3](#))
8. Set the Battery Voltage to 2.3 V at J5 and J8.
9. Run Batch File "ADC1.Bat". The returned value is 0xB2.
10. Run Batch File "WRTBAT2 B2".
11. Set the Battery Voltage to 2.2 V at J5 and J8.
12. Run Batch File "ADC1.bat". The returned value is 0xB3.
13. Run Batch File "WRTBAT3 B3".

Item(3): Charge Current Reference

1. Set the Battery to test unit.
2. Press the Power Key.
3. Input +5 V with 100 mA limiter to J1(Charge+) and J2(Charge-).
4. Run Batch File "CHG1" to turn on the charge pulse.
5. Run Batch File "CHARMT 2". The returned value is M1.
6. Run Batch File "SET_REF1 M1".(Refer to [Fig. 12-4](#))
7. Input +5 V with 200 mA limiter to J1(Charge+) and J2(Charge-).
8. Run Batch File "CHG1" to turn on the charge pulse.
9. Run Batch File "CHARMT 2". The returned value is M2.
10. Run Batch File "SET_REF2 M2".

Fig. 12-3

```
C:\ISDN>adc1
CF
C:\ISDN>wrtbat1 CF

OK
C: \ISDN>
```

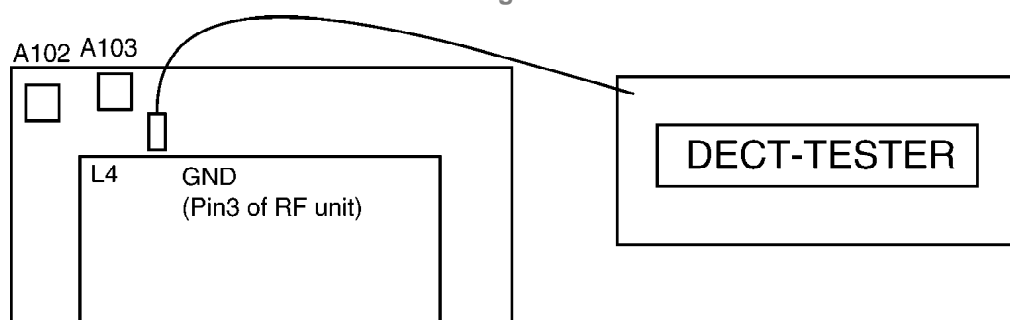

Fig. 12-4

```
C:¥ISDN>charmt 2
24
C:¥ISDN>set_ref1 24
24
```

Item(4) : RSSI

1. Set the Battery to test unit.
2. Press the Power Key.
3. Connect to RF Cable between DECT-Tester and the unit.
* Please connect RF Cable to L4 of A103 side and GND at Handset. (Refer to **Fig. 12-5**)
4. Set the RF Level -63dBm and run Batch File RDRSSI. The returned value is A.
5. Set the RF Level -83dBm and run Batch File RDRSSI. The returned value is B.
6. Run Batch File Wree 00 0D 02 B A.

Fig. 12-5



13. CHECK PROCEDURE (BASE UNIT)

13.1. Test Equipment Required and Equipment Setup

(a) CMD60			
TEST MODE:	FP		
CONFIG MENU	SIGN	SCRAMBLE:	ON
MANUAL TEST	TRAFFIC SLOT:	2 or 4	
	TRAFFIC CARRIER:	0	
	RF LEVEL:	- 55 dBm	
MODULE TEST	TRIGGER:	RISING SLOPE	
	EXP. POWER:	30 dBm	
MODULE TEST	RF GENERATOR	FREQ:	1888.704 MHz
		DEVIATION:	288 kHz
		SIGNAL:	01010101
		RF LEVEL:	- 65 dBm

(b) Power Supply (9V 850mA)

(c) DMM

(d) AFmeter

(e) Frequency Counter

(f) Oscilloscope

(g) Computer (PC): Execute Hyper-Terminal.

Connect a 9V supply to the board CN3 pin +9V, pin GND, (or connect an AC Adaptor).

Connect the computer serial link to the Test Fixture TP350(TXD), TP355(RXD) and TP521(GND).

13.2. Initial Power + BBIC Tests

1. Turn on the 9 V supply.
2. Check for approx. 195 mA current on the 9 V supply.
3. Check the 7.15 V supply voltage (TP528). It must be 7.15 ± 0.2 V.
4. Check the 5 V supply voltage (TP116). It must be 5.0 ± 0.2 V.
5. Check the 3 V supply voltage (TP119). It must be 3.0 ± 0.2 V.
6. Check the 2.5 V supply voltage (TP533). It must be 2.5 ± 0.2 V.
7. Check the -43 V supply voltage (TP93). It must be -43 ± 3 V.
8. Check the 4 V supply voltage (TP117). It must be 4.0 ± 0.2 V.
9. Check the 3.2 V supply voltage (TP118). It must be 3.2 ± 0.2 V.
10. Connect SCLK (TP306) to CH.1 on the scope.
11. Check if the clock waveform is 10,368,000 Hz ± 7 Hz.
12. Send batch file "SLF".

13.3. Set the Clock Frequency

1. Transfer SCLK (TP306) to the frequency counter.
2. Send batch file "CLK nn" to set the clock frequency. The default value of nn is B6. Increase the value to increase the frequency and vice-versa. The clock frequency must be 10,368,000 Hz ± 4 Hz.

13.4. Quick TX Check

1. Set the CMD60 to MODULE TEST.
2. Send batch file “H”.
3. Confidence check of Power (NTP): must be +20 to +25 dBm.
4. Confidence check of Frequency Offset: must be 0 \pm 40 kHz.
5. Confidence check of Deviation of B field Data Type 01010101: it must be 207 to 270 kHz.

13.5. Loopback Test

1. Set the CMD60 to MANUAL TEST.
2. Set the CMD60 TRAFFIC CARRIER to 0.
3. Send batch file “TST”.
4. On the CMD60, press “SETUP CONNECT”.
5. Check the Power (NTP): It must be +20 to +25 dBm.
6. Press MODULATION.
7. Set Data Type to “FIG 31”.
8. Check the Frequency Drift: it must be 0 \pm 45 kHz/ms.
9. Check the Frequency Offset: it must be 0 \pm 40 kHz.
10. Send batch file “WREE 00 16 nm” to adjust the Deviation (Max. \pm B Field) with Data Type: 01010101. Increase the value nm to increase the Deviation and vice-versa. The least significant digit (m) of the value must be 1 (i.e. only the values 31, 41, 51, 61 etc. are allowed). The Deviation must be 207 to 270 kHz.
11. Check the Deviation (Max. \pm B Field) with Data Type “FIG 31”: it must be 202 to 404 kHz.
12. Press MENU UP.
13. Press POWER RAMP
14. Check the Burst fits mask.
15. Press MENU UP.
16. Press BER.

17. Note the Sensitivity (reduce the RF LEVEL for a BER of approx. 1000 ppm): RF LEVEL must be < - 90 dBm.

18. Press MENU UP.

19. Press BEARER RELEASE.

Note:

These tests can be repeated on Traffic Carriers 5 and 9.

13.6. Charge Current Test

1. Connect the 9 V supply to CN3 pin 1 (+) and CN3 pin 2 (-).
2. Connect the ammeter with a series load resistor of $56\ \Omega$ / 2 W to TP531 (+) and TP532 (-).
3. Switch on the 9 V supply.
4. Check the Charge Voltage to TP531 and TP532 6.1 ± 0.2 V.
5. Switch off the 9 V supply.
6. Connect the 9 V supply to the "9 V Supply" sockets on the test jig.

13.7. ISDN Line Test

1. Connect the ISDN line from the base unit to the line simulator.
2. Press the "TALK" button of the handset registered in the base, or press "0" of the SLT connected to the internal port.
3. Check the green "B1" or "B2" LED is on.
4. Check the tone signal from the handset or SLT.
5. On-hook the handset or SLT.
6. Check the green "B1" or "B2" LED is off.

13.8. Internal Port Test

1. Connect the ISDN line from the base unit to the line simulator.
2. Connect the SLT to the internal port.
3. Pick up the receiver and check the tone signal.
4. Press "0".
5. Check the green "B1" or "B2" LED is on.
6. Check the tone signal.

7. On-hook the SLT.

8. Check the green "B1" or "B2" LED is off.

14. CHECK PROCEDURE (HANDSET)

14.1. Test Equipment Required and Equipment Setup

(a) CMD60 (DECT TESTER)

TEST MODE:	PP
MANUAL TEST	RFPI: 0000000010
	DUMMY SLOT: 0
	DUMMY CARRIER: 5
	TRAFFIC SLOT: 2
	TRAFFIC CARRIER: 0
	RF LEVEL: - 55 dBm
MODULE TEST	TRIGGER: RISING SLOPE
	EXP. POWER: 30 dBm
CONFIG MENU	SIGN SCRAMBLE: OFF
MODULE TEST	RF GENERATOR
	FREQ: 1888.704 MHz
	DEVIATION: 288 kHz
	SIGNAL: 00001111
	RF LEVEL: - 40.7 dBm

(b) Power Supply (12V 1A)

(c) Digital Multi Meter

(d) Oscilloscope

(e) Frequency Counter

(f) PC: Set PC to the MS-DOS Mode.

Check the Com Port. And use Batch File "COM com number".

(g) Serial Cable

(h) Test Software (Batch Files)

14.2. Initial Power +BBIC Tests

1. Turn on the 2.5 V supply.

2. Press the POWER KEY.

3. Check for "Beep" and turns on LEDs for LCD Back Light.

4. Check the 3.85 V supply voltage (TP2). It must be 3.85 V +/-0.2 V.

5. Check the 2.85 V supply voltage (TP4). It must be 2.85 V +/-0.2 V.

6. Check the 3.2 V supply voltage (TP3). It must be 3.2 V +/-0.2 V.

7. Send Batch File "SELFTEST" in order to check S/W Version.

14.3. Initial Power +BBIC Tests

1. Connect RFCLK(TP13) to the Frequency counter.

2. Run Batch File "MCLK". You can see the current setting at PC display.

3. To increase the Frequency, to increase the CLK setting value.

The Clock Frequency must be 10,368,000 Hz +/-10 Hz.

14.4. Quick Check

1. Set the CMD 60(DECT TESTER) to "MODULE TEST".
2. Run Batch File "TXRF 5,0".
3. Check the POWER(NTP): Must be +15 dBm to +20 dBm.
4. Check the Frequency Offset: Must be 0 +/-40 kHz.
5. Check the Deviation of B-Field Modulation (Data type is FIG 31): Must be 270 kHz -380 kHz/Div.

14.5. Loopback Test

1. Set CMD60 to Manual Test.
2. Set CMD60 TRAFFIC CARRIER to "5".
3. Run Batch File "TESTMODE 10".
4. Press "SETUP CONNECT" on the CMD60.
5. Check Power (NTP): Must be +15 to +20 dBm.
6. Press "MODULATION".
7. Set Data Type to "FIG 31".
8. Check the Frequency Drift: Must be 0 +/-45 kHz/ms.
9. Check the Frequency Offset: Must be 0 +/-40 kHz.
10. Check the Deviation of B-Field Modulation (Data Type FIG 31): Must be 270 kHz - 380 kHz/Div.
11. Press "MENU UP" KEY at CMD60.
12. Press "POWER RAMP".
13. Check the Burst wave fits the MASK.
14. Press "MENU UP" KEY at CMD60.
15. Press "BER".
16. Check the Sensitivity (Long-term BER) isn't upper 1000 ppm by reducing RF Level.
The RF Level which BER is lower than 1000 ppm must be lower than -85 dBm.

17. Press "MENU UP" KEY at CMD60.

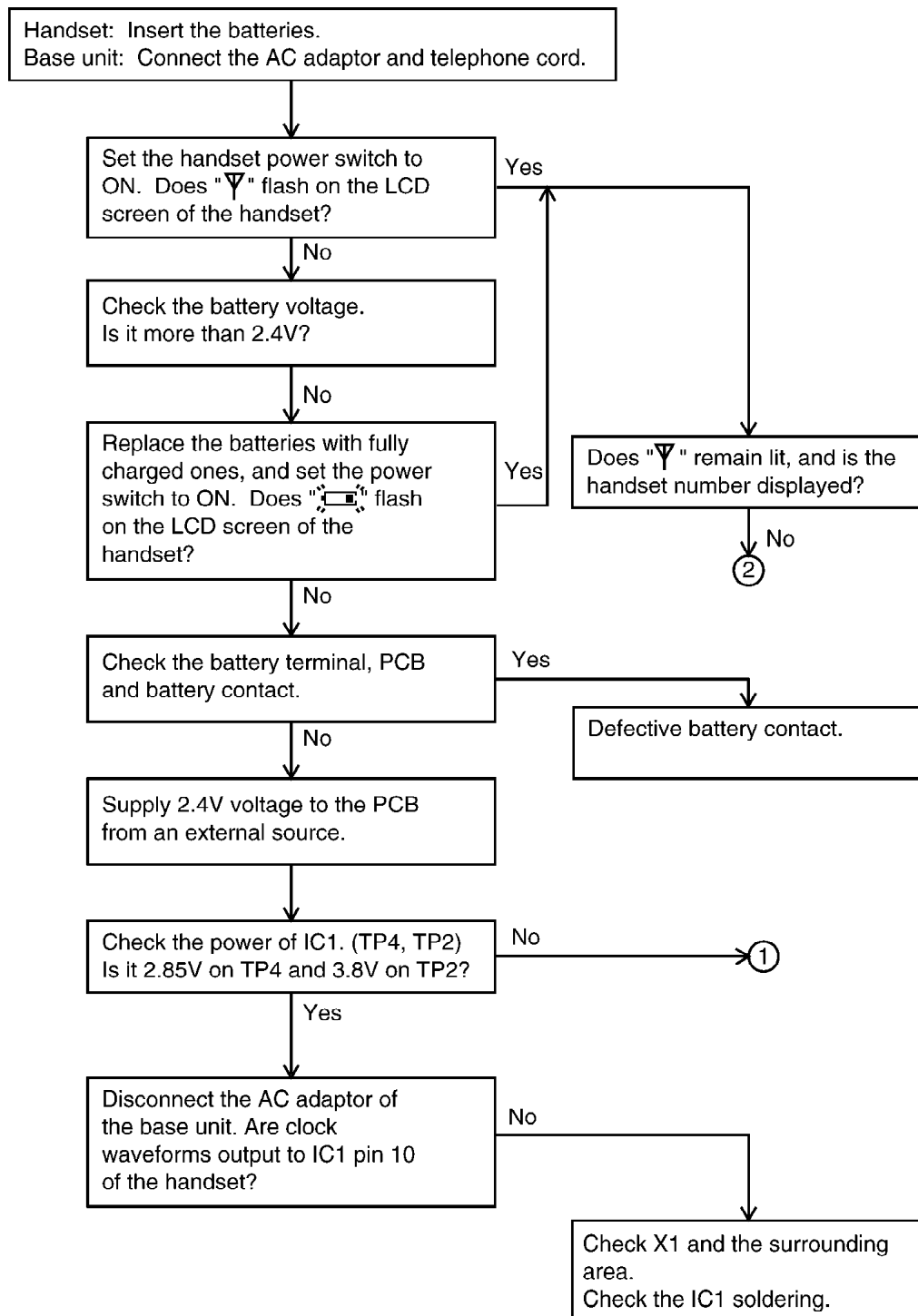
18. Press "BEARER RELEASE".

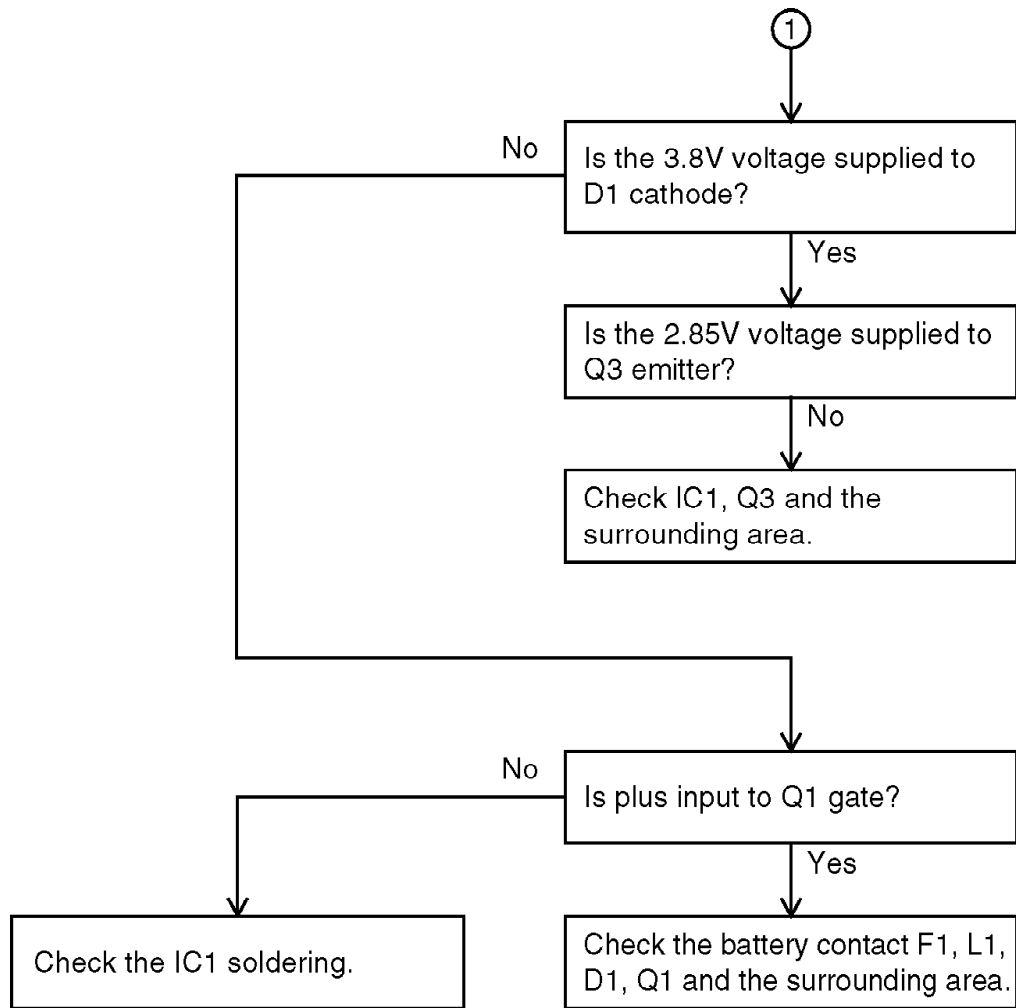
Note:

Above Tests should be repeated on Traffic Carriers 5 and 9.

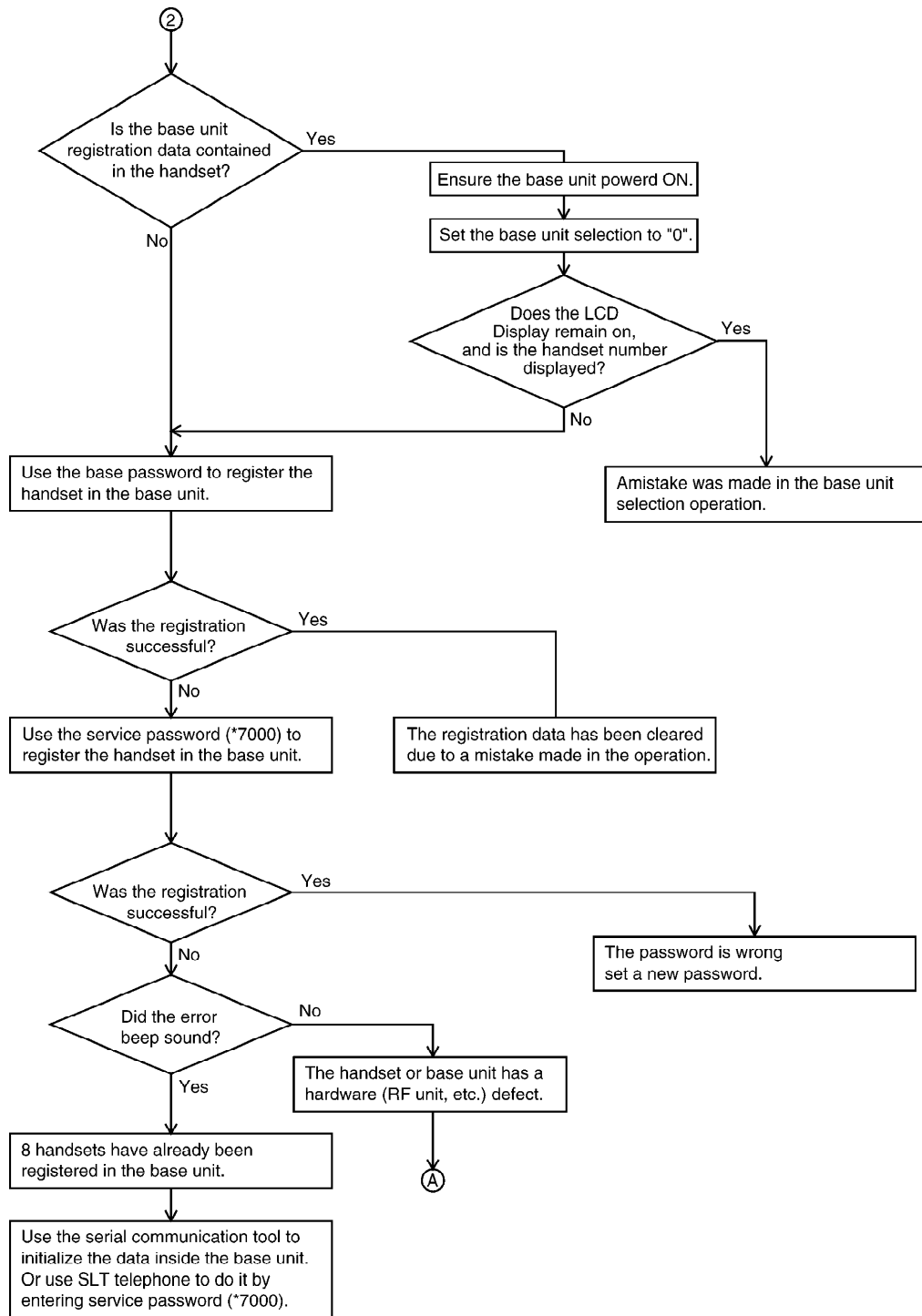
15. TROUBLESHOOTING GUIDE

15.1. Handset: Does not Operate

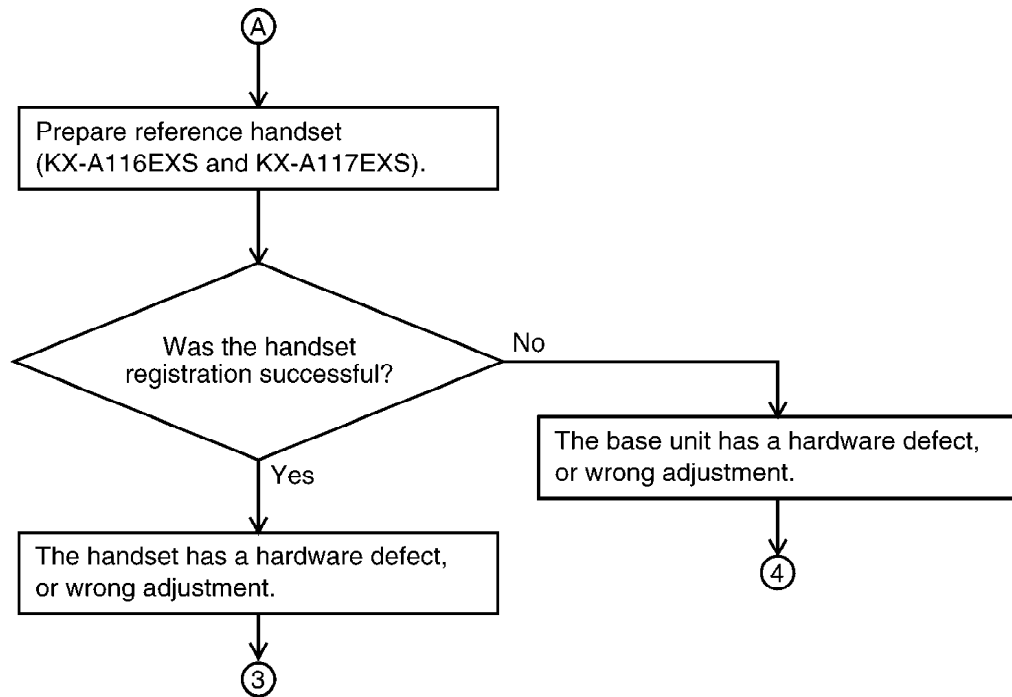




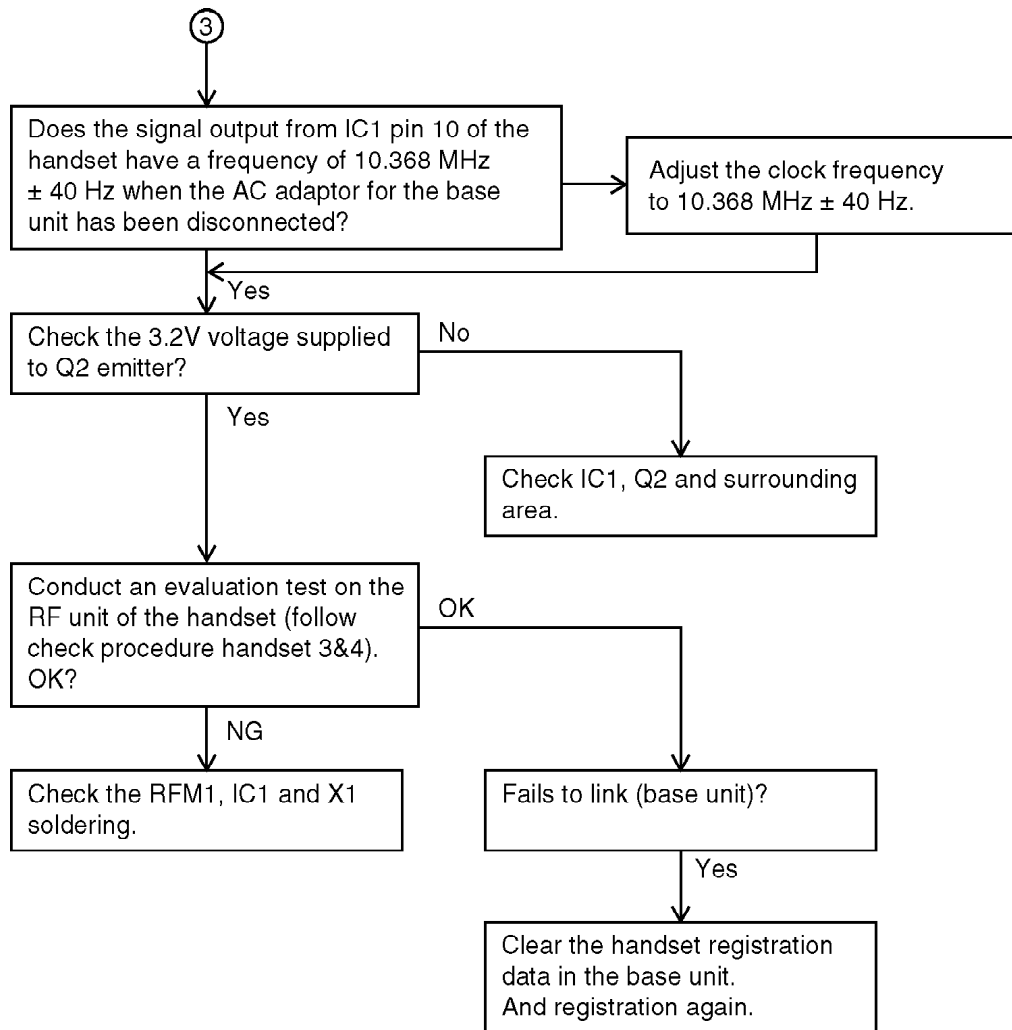
15.2. No Link



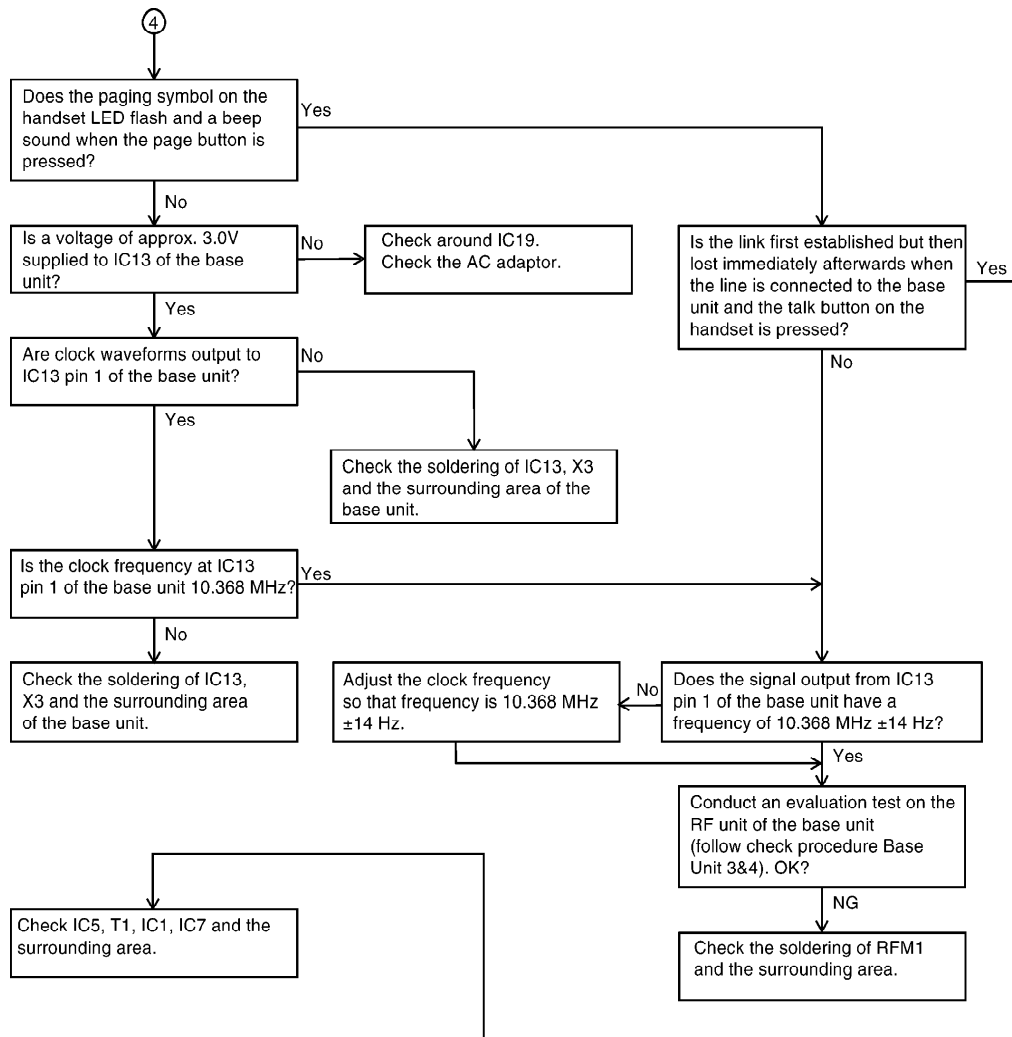
(Use the method for clearing the registered handset data in the base unit.)



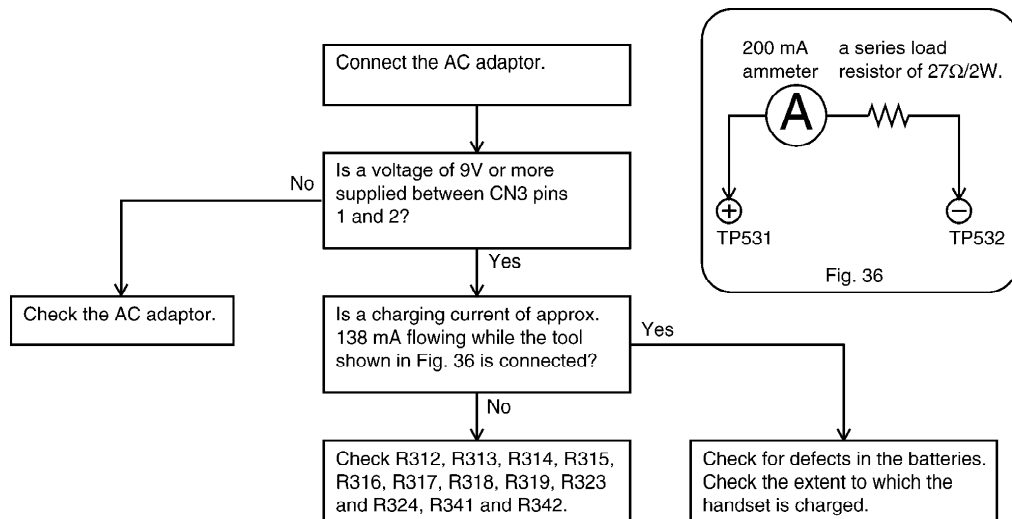
15.3. Handset: Does not Link



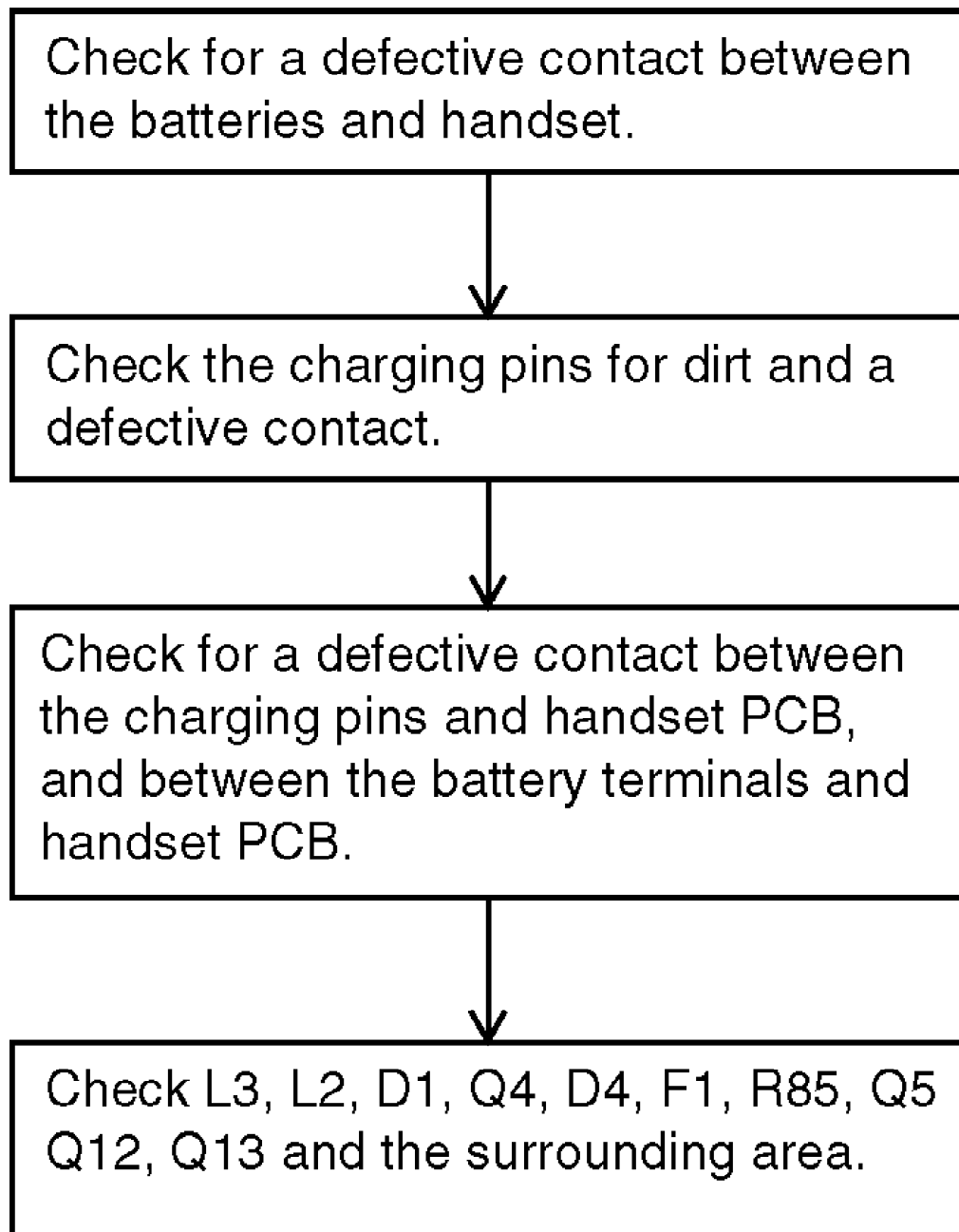
15.4. Base Unit: Does not Link



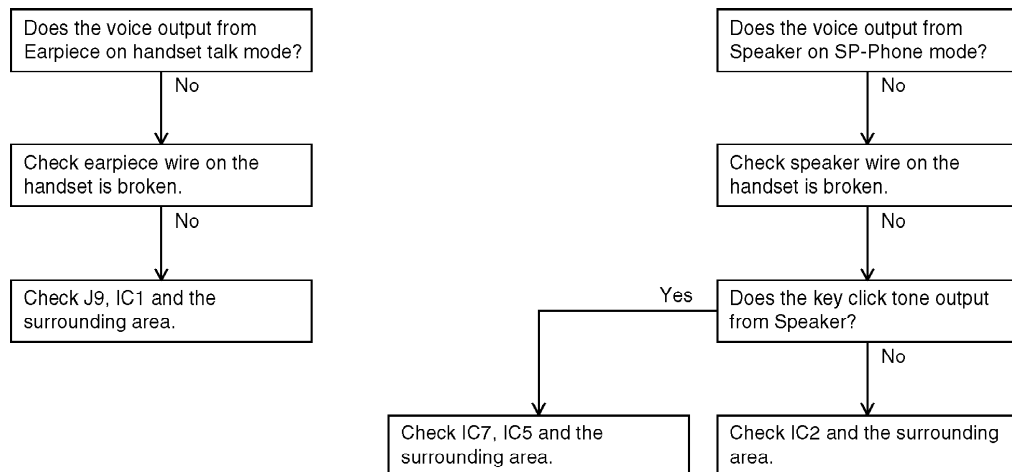
15.5. Base Unit: Does not Charge



15.6. Handset: Does not Charge



15.7. No Voice Reception



15.8. No Voice Transmission

(Judged to be some kind of problem in the handset.)

Check the microphone and surrounding area on the handset.

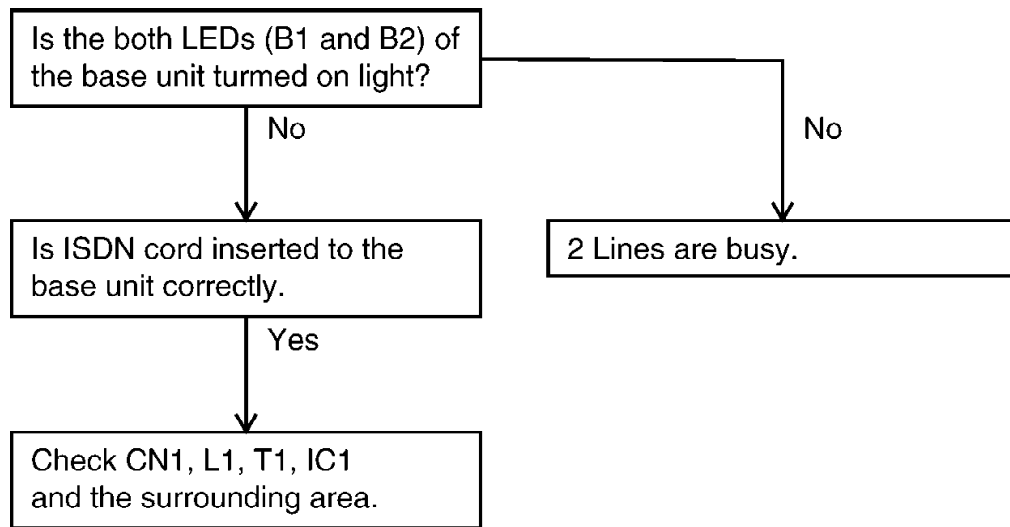


Check Headset Jack pin 3, 2 and the surrounding area.

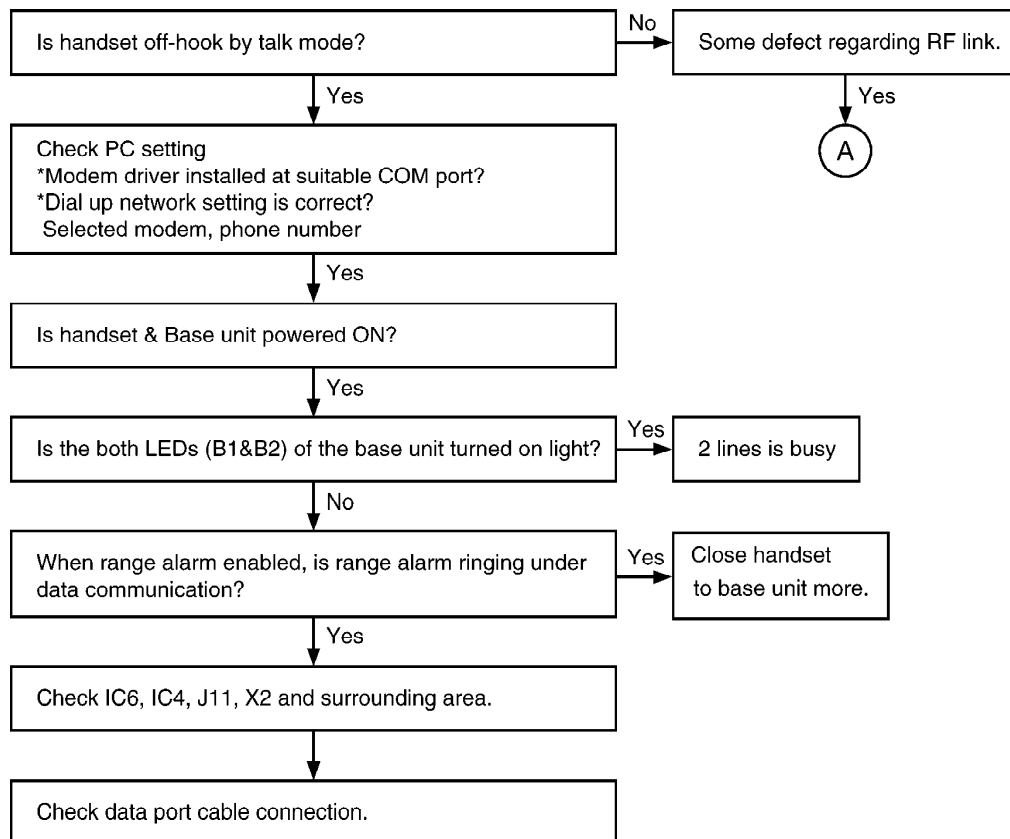


Check IC2 pin 60, 61, 63, 64 and the surrounding area.

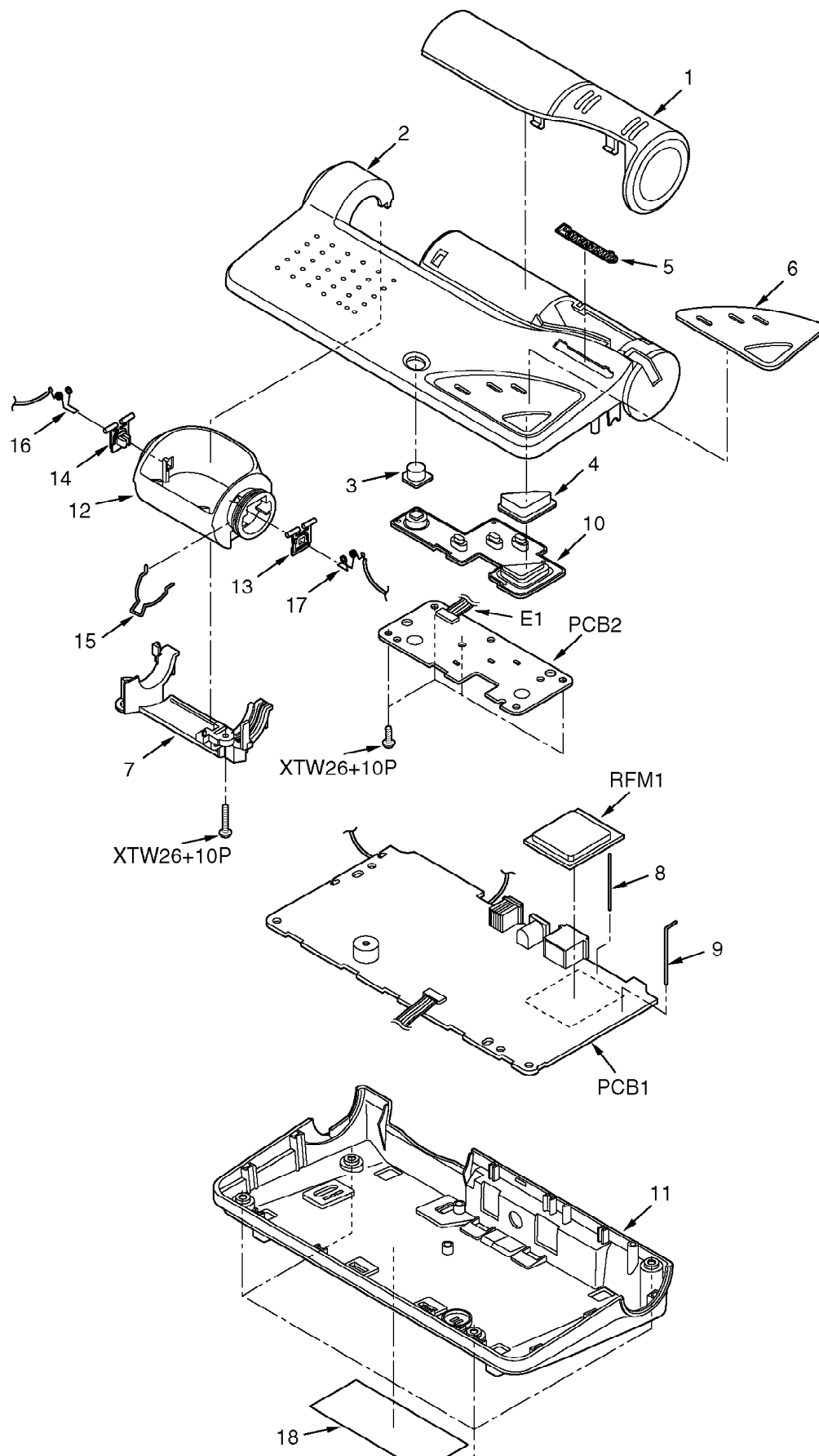
15.9. Not Off-Hook

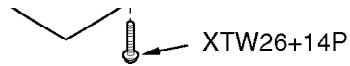


15.10. No establish connection with network

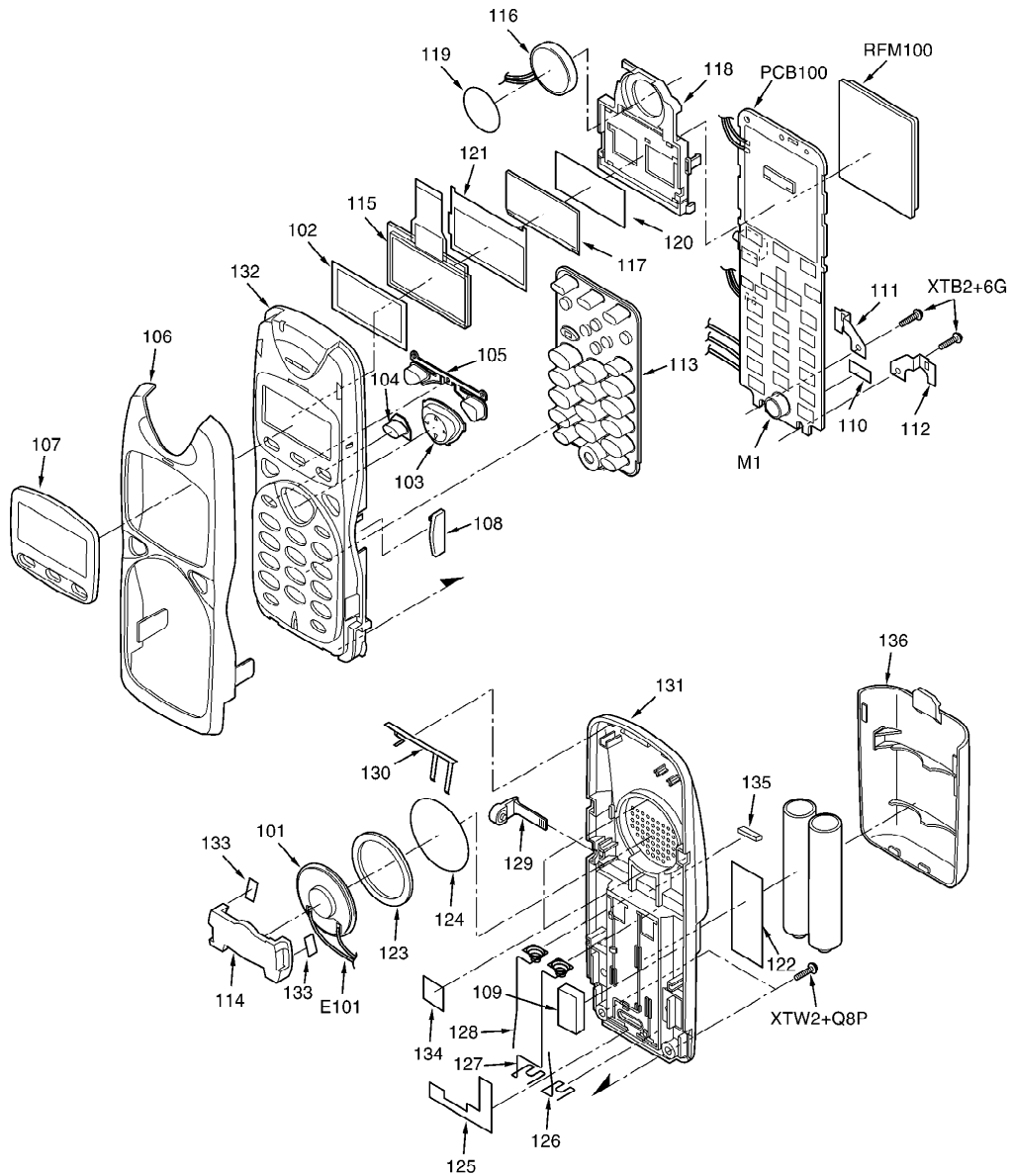


16. CABINET AND ELECTRICAL PARTS LOCATION (BASE UNIT)

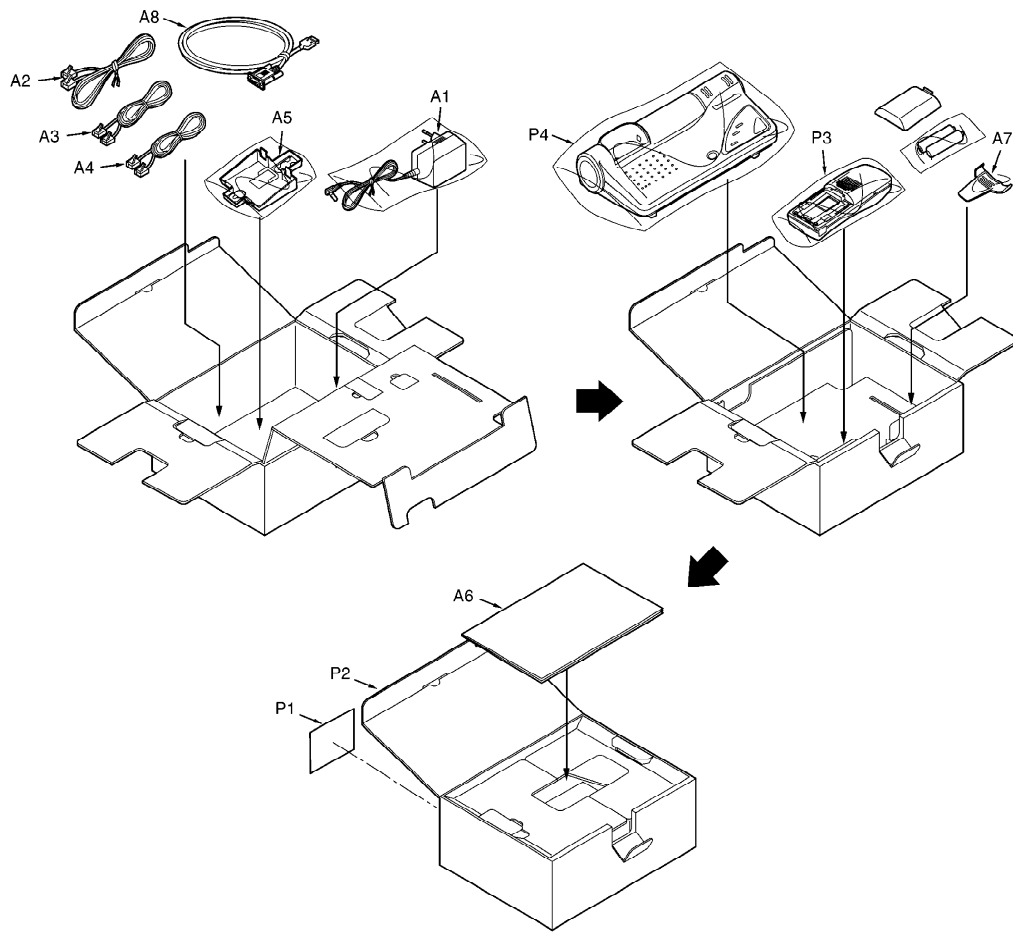




17. CABINET AND ELECTRICAL PARTS LOCATION (HANDSET)



18. ACCESSORIES AND PACKING MATERIALS



19. REPLACEMENT PARTS LIST

1. RTL (Retention Time Limited)

The marking (RTL) indicates that the Retention Time is limited for this item.

After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

2. Important safety notice

Components identified by the ⚠ mark indicates special characteristics important for safety. When replacing any of these components, only use specified manufacture's parts.

3. The S mark means the part is one of some identical parts. For that reason, it may be different from the installed part.

4. RESISTORS & CAPACITORS

Unless otherwise specified;

All resistors are in ohms (Ω) K=1000 Ω , M=1000k Ω

All capacitors are in MICRO FARADS (μ F) P= μ μ F

*Type & Wattage of Resistor

Type					
ERC:Solid		ERX:Metal Film		PQRD:Carbon	
ERD:Carbon		ERG:Metal Oxide		PQRQ:Fuse	
PQ4R:Chip		ERO:Metal Film		ERF:Wire Wound	
Wattege					
10,16,18:1/8W		14,25,S2:1/4W		12,50,S1:1/2W	
		1:1W		2:2W	
				5:5W	
ECFD:Semi-Conductor		ECCD,ECKD,PQCBC,PQVP : Ceramic			
ECQS:Styrol		ECQM,ECQV,ECQE,ECQU,ECQB : Polyester			
PQCBX,ECUV:Chip		ECEA,ECSZ,ECOS : Electrolytic			
ECMS:Mica		ECQP : Polypropylene			
Voltage					
ECQ Type		ECQG ECQV Type	ECSZ Type	Others	
1H : 50V	05 : 50V	OF : 3.15V	OJ : 6.3V	1V : 35V	
2A : 100V	1 : 100V	1A : 10V	1A : 10V	50,1H : 50V	
2E : 250V	2 : 200V	1V : 35V	1C : 16V	1J : 63V	
2H : 500V		OJ : 6.3V	1E,25 : 25V	2A : 100V	

19.1. Base Unit

19.1.1. Cabinet and Electrical Parts

Ref. No.	Part No.	Part Name & Description	Remarks
1	PQGG10115Z1	GRILLE	S
2	PQKM10463Z1	UPPER CABINET	S
3	PQBC10316Z1	DAY/NIGHT BUTTON	S
4	PQBC10317Z1	LOCATOR BUTTON	S
5	PQGB7X	BADGE	
6	PQGP10175Z1	PANEL	S
7	PQKE10119Z1	CHARGE CASE HOLDER	S
8	PQSA10112Z	ANTENNA / MAIN	
9	PQSA10113Y	ANTENNA / SUB	
10	PQSX10160Z	RUBBER SWITCH	
11	PQYF10183Z1	LOWER CABINET	S
12	PQKE10107X2	CHARGE CASE / PLASTIC	S
13	PQKE10111Z1	CHARGE TERMINAL CASE	S
14	PQKE10111Z1	CHARGE TERMINAL CASE	S
15	PQUS10263Z	CLICK SPRING	
16	PQJT10170Y	CHARGE TERMINAL	
17	PQJT10170Y	CHARGE TERMINAL	
18	PQGT14929Y	NAME PLATE	

19.1.2. MAIN P.C. BOARD PARTS

Ref. No.	Part No.	Part Name & Description	Remarks
PCB1	PQWP1D707EXH	MAIN P.C BOARD ASS'Y (RTL)	
		(ICS)	
IC1	PQVI2340FA20	IC	
IC2	PQVIBS2L1STF	IC	
IC3	PQWI1D707EXH	IC	
IC5	PSVIPS2115F2	IC	
IC6	PQVI25LC32I	IC	
IC7	PQVIMS30R830	IC	
IC8	PQVINJM2904F	IC	S
IC9	PQVIMC74066T	IC	
IC10	PQVINJM2904F	IC	S
IC11	PQVITLC3055Q	IC	
IC13	PQVINS14425A	IC	
IC14	PQVIV6325LTF	IC	S
IC15	PQVISST3920F	IC	
IC16	C0CBADD00003	IC	
IC17	PQVILM1117MP	IC	S
IC18	PQVILM1117MP	IC	S
IC19	PQVILM1117MP	IC	S
IC20	PQVIP5596CT	IC	
IC21	PQVIBS2L1STF	IC	
IC22	PQVILM1117MP	IC	S
IC23	PQVITC7SET08	IC	S
		(TRANSISTORS)	
Q4	PQVTIRF9510S	TRANSISTOR(SI)	
Q5	PQVTBC80825T	TRANSISTOR(SI)	S
		(DIODES)	
D5	MA8180	DIODE(SI)	
D7	PQVDSM6T390A	DIODE(SI)	
D9	PQVDBZ55B2V7	DIODE(SI)	S
D10	PQVDSM6T390A	DIODE(SI)	
D11	PQVDBZ55B2V7	DIODE(SI)	S
D12	PQVDRLS73T	DIODE(SI)	S
D13	PQVDRLS73T	DIODE(SI)	S
D14	PQVDRLS73T	DIODE(SI)	S
D15	PQVDRLS73T	DIODE(SI)	S
D17	PQVDRLS73T	DIODE(SI)	S
D18	PQVDRLS73T	DIODE(SI)	S
D19	PQVDRLS73T	DIODE(SI)	S
D20	PQVDRLS73T	DIODE(SI)	S
D21	PQVDRLS73T	DIODE(SI)	S
D23	MA110	DIODE(SI)	
D24	PQVDSMBYW12	DIODE(SI)	
D26	PQVDHVU359	DIODE(SI)	
D28	MA8068M	DIODE(SI)	
D29	MA8068M	DIODE(SI)	
D30	MA8047	DIODE(SI)	
D31	MA110	DIODE(SI)	
D33	MA8036H	DIODE(SI)	
		(COILS)	
FIL1	PQLQR1RS220	COIL	S
FIL2	PQLQR1RS220	COIL	S
FIL3	PQLQR1RS220	COIL	S
FIL4	PQLQR1RS220	COIL	S

Ref. No.	Part No.	Part Name & Description	Remarks
FIL5	PQLQR1RS220	COIL	S
FIL6	PQLE1463003T	COIL	
FIL7	PQLE1463003T	COIL	
FIL8	PQLQR1RS220	COIL	S
FIL9	PQLQR2K1A102	COIL	
FIL10	PQLQR2K1A102	COIL	
FIL11	PQLQR2K1A102	COIL	
L2	PQLQR1T2R2M	COIL	
L3	PQLQR1T2R2M	COIL	
L4	PQLE1D101MCT	COIL	
L5	G1C6R8MA0046	COIL	
L6	G1C6R8MA0046	COIL	
R179	PQLQR1RS220	COIL	S
		(JACKS)	
CN1	PQJJ1TD2Z	JACK/SOCKET	S
CN2	PQJJ1TA15Z	JACK/SOCKET	S
CN3	PQJJ1B4Y	JACK/SOCKET	S
		(CRYSTAL OSCILLATORS)	
X1	PQVCF7680N5Z	CRYSTAL OSCILLATOR	
X2	PQVCF2000N8Z	CRYSTAL OSCILLATOR	
X3	PQVCF1036N4Z	CRYSTAL OSCILLATOR	
		(OTHERS)	
E1	PQJE10109Z	CONNECTOR	
BUZ1	PQEFBC12111B	BUZZER	S
CN4	PQJS07B37ZAT	CONNECTOR	
T1	PQLT9Z30A	TRANSFORMER	
		(RESISTORS)	
R8	ERJ3GEYJ103	10k	
R9	ERJ3GEYJ103	10k	
R27	PQ4R10XJ822	8.2k	S
R28	PQ4R18XJ820	82	S
R29	PQ4R18XJ820	82	S
R30	PQ4R18XJ820	82	S
R31	PQ4R18XJ820	82	S
R32	ERJ3EKF1003	100k	
R33	ERJ3EKF1003	100k	
R34	ERJ3EKF1003	100k	
R35	ERJ3EKF1003	100k	
R36	ERJ3EKF3002	100k	
R37	ERJ3GEYJ153	15k	
R38	ERJ3GEYJ103	10k	
R39	ERJ3GEYJ103	10k	
R40	ERJ12NF9101U	9.1k	
R42	PQ4R10XJ390	39	S
R43	PQ4R10XJ390	39	S
R44	PQ4R10XJ182	1.8k	S
R45	PQ4R10XJ182	1.8k	S
R46	ERJ3GEYJ103	10k	
R47	ERJ3GEYJ103	10k	
R48	ERJ3GEYJ103	10k	
R49	ERJ3GEYJ103	10k	
R50	ERJ3GEYJ103	10k	
R51	ERJ3GEYJ103	10k	
R52	ERJ3GEYJ103	10k	

Ref. No.	Part No.	Part Name & Description	Remarks
R53	ERJ3GEYJ103	10k	
R54	ERJ12NF3003U	300k	
R55	ERJ3GEY0R00	0	
R56	ERJ3GEY0R00	0	
R57	ERJ3EKF4121	4.12k	
R58	ERJ3EKF2872	28.7k	
R60	ERJ3EKF2872	28.7k	
R61	ERJ3EKF5232	52.3k	
R62	PQRD32R220FT	0.22	
R64	ERJ3GEY0R00	0	
R65	ERJ3GEYJ104	100k	
R66	ERJ3GEYJ103	10k	
R71	ERJ3GEYJ101	100	
R72	ERJ3GEYJ181	180	
R73	ERJ3GEYJ390	39	
R74	ERJ3GEYJ221	220	
R75	ERJ3GEYJ331	330	
R76	ERJ3GEYJ100	10	
R77	ERJ3GEYJ121	120	
R78	ERJ3GEYJ121	120	
R79	ERJ3GEYJ470	47	
R81	PQ4R18XJ000	0	S
R82	PQ4R18XJ000	0	S
R84	ECUV1H100DCV	10p	
R86	ERJ3GEYJ103	10k	
R89	ERJ3GEYJ471	470	
R91	ERJ3GEYJ221	220	
R92	ERJ3GEYJ221	220	
R93	ERJ3GEYJ221	220	
R94	ERJ3GEYJ103	10k	
R95	ERJ3GEYJ103	10k	
R97	ERJ3GEY0R00	0	
R16	ERJ3GEYJ334	330k	
R20	ERJ3GEYJ103	10k	
R23	ERJ3GEYJ103	10k	
R25	PQ4R18XJ000	0	S
R26	PQ4R10XJ822	8.2k	S
R100	ERJ3GEY0R00	0	
R101	ERJ3GEYJ102	1k	
R102	ERJ3GEYJ331	330	
R103	ERJ3GEYJ331	330	
R104	ERJ3GEYJ331	330	
R106	ERJ3GEY0R00	0	
R107	ERJ3GEY0R00	0	
R108	ERJ3GEY0R00	0	
R109	ERJ3GEYJ101	100	
R110	ERJ3GEYJ103	10k	
R112	ERJ3GEY0R00	0	
R114	ERJ3GEYJ104	100k	
R115	ERJ3GEYJ104	100k	
R116	ERJ3GEYJ104	100k	
R117	ERJ3GEYJ104	100k	
R118	ERJ3GEYJ104	100k	
R119	ERJ3GEYJ104	100k	

Ref. No.	Part No.	Part Name & Description	Remarks
R120	ERJ3GEYJ104	100k	
R121	ERJ3GEY0R00	0	
R122	ERJ3GEY0R00	0	
R123	ERJ3GEYJ124	120k	
R125	ERJ3GEYJ220	22	
R127	ERJ3GEYJ124	120k	
R128	ERJ3GEY0R00	0	
R129	ERJ3GEY0R00	0	
R130	ERJ3GEYJ153	15k	
R131	ERJ3GEYJ153	15k	
R132	ERJ3GEYJ104	100k	
R133	ERJ3GEYJ104	100k	
R134	ERJ3GEYJ104	100k	
R135	ERJ3GEYJ104	100k	
R136	ERJ3GEYJ330	33	
R137	ERJ3GEYJ330	33	
R138	ERJ3GEYJ103	10k	
R139	ERJ3GEYJ330	33	
R140	ERJ3GEY0R00	0	
R143	ERJ3GEY0R00	0	
R144	ERJ3GEYJ330	33	
R145	ERJ3GEYJ330	33	
R146	ERJ3GEYJ330	33	
R147	ERJ3GEYJ330	33	
R148	ERJ3GEYJ330	33	
R149	ERJ3GEYJ330	33	
R150	ERJ3GEYJ330	33	
R151	ERJ3GEYJ330	33	
R152	ERJ3GEYJ330	33	
R153	ERJ3GEYJ330	33	
R154	ERJ3GEYJ330	33	
R155	ERJ3GEYJ330	33	
R156	ERJ3GEYJ330	33	
R157	ERJ3GEYJ330	33	
R158	ERJ3GEYJ330	33	
R159	ERJ3GEYJ330	33	
R160	ERJ3GEY0R00	0	
R161	ERJ3GEYJ330	33	
R162	ERJ3GEYJ330	33	
R163	ERJ3GEYJ103	10k	
R164	ERJ3GEYJ103	10k	
R165	ERJ3GEYJ104	100k	
R166	ERJ3GEYJ104	100k	
R167	ERJ3GEYJ104	100k	
R168	ERJ3GEYJ104	100k	
R169	ERJ3GEYJ104	100k	
R170	ERJ3GEYJ104	100k	
R171	ERJ3GEYJ104	100k	
R172	ERJ3GEYJ104	100k	
R173	ERJ3GEYJ103	10k	
R174	ERJ3GEYJ330	33	
R175	ERJ3GEYJ330	33	
R176	ERJ3GEYJ103	10k	
R177	ERJ3GEYJ103	10k	

Ref. No.	Part No.	Part Name & Description	Remarks
R178	ERJ3GEYJ103	10k	
R180	ERJ3GEYJ330	33	
R181	ERJ3GEYJ330	33	
R182	ERJ3GEYJ103	10k	
R183	ERJ3GEYJ330	33	
R184	ERJ3GEYJ330	33	
R185	ERJ3GEYJ330	33	
R187	ERJ3GEYJ330	33	
R188	ERJ3GEYJ103	10k	
R189	ERJ3GEYJ330	33	
R190	ERJ3GEYJ103	10k	
R191	ERJ3GEYJ103	10k	
R192	ERJ3GEYJ103	10k	
R193	ERJ3GEYJ221	220	
R194	ERJ3GEYJ103	10k	
R195	ERJ3GEYJ105	1M	
R198	ERJ3GEYJ101	100	
R199	ERJ3GEYJ681	680	
R200	ERJ3GEYJ101	100	
R201	ERJ3GEYJ101	100	
R202	ERJ3GEYJ105	1M	
R203	ERJ3GEYJ103	10k	
R205	ERJ3GEYJ103	10k	
R206	ERJ3GEYJ100	10	
R207	ERJ3GEYJ103	10k	
R208	ERJ3GEYJ103	10k	
R209	ERJ3GEYJ100	10	
R210	ERJ3GEYJ103	10k	
R211	ERJ3GEYJ103	10k	
R214	ERJ3GEYJ330	33	
R215	ERJ3GEYJ104	100k	
R216	ERJ3GEYJ330	33	
R217	ERJ3GEYJ330	33	
R218	ERJ3GEYJ102	1k	
R219	ERJ3GEYJ103	10k	
R220	ERJ3GEYJ102	1k	
R221	ERJ3GEYJ101	100	
R222	ERJ3GEYJ100	10	
R223	ERJ3GEYJ100	10	
R225	ERJ3GEYJ100	10	
R226	ERJ3GEYJ100	10	
R227	ERJ3GEYJ100	10	
R228	ERJ3GEYJ103	10k	
R229	ERJ3GEYJ101	100	
R230	ERJ3GEY0R00	0	
R232	ERJ3GEYJ330	33	
R233	ERJ3GEYJ330	33	
R234	ERJ3GEYJ330	33	
R235	ERJ3GEYJ330	33	
R236	ERJ3GEYJ330	33	
R237	ERJ3GEYJ330	33	
R238	ERJ3GEYJ330	33	
R239	ERJ3GEYJ330	33	
R240	ERJ3GEYJ330	33	

Ref. No.	Part No.	Part Name & Description	Remarks
R241	ERJ3GEYJ330	33	
R242	ERJ3GEYJ330	33	
R243	ERJ3GEYJ330	33	
R244	ERJ3GEYJ330	33	
R245	ERJ3GEYJ330	33	
R246	ERJ3GEYJ330	33	
R247	ERJ3GEYJ330	33	
R248	ERJ3GEYJ330	33	
R249	ERJ3GEYJ330	33	
R250	ERJ3GEYJ330	33	
R251	ERJ3GEYJ330	33	
R252	ERJ3GEYJ330	33	
R253	ERJ3GEYJ330	33	
R254	ERJ3GEYJ330	33	
R255	ERJ3GEYJ330	33	
R256	ERJ3GEYJ330	33	
R257	ERJ3GEYJ122	1.2k	
R258	ERJ3GEYJ122	1.2k	
R259	ERJ3GEYJ103	10k	
R260	ERJ3GEY0R00	0	
R261	ERJ3GEY0R00	0	
R262	ERJ3GEY0R00	0	
R265	ERJ3GEY0R00	0	
R266	ERJ3GEYJ103	10k	
R267	ERJ3GEYJ103	10k	
R268	ERJ3GEYJ104	100k	
R269	ERJ3GEYJ104	100k	
R270	ERJ3GEYJ104	100k	
R271	ERJ3GEYJ104	100k	
R272	ERJ3GEYJ104	100k	
R273	ERJ3GEYJ104	100k	
R274	ERJ3GEYJ104	100k	
R275	ERJ3GEYJ121	120	
R276	ERJ3GEYJ121	120	
R277	ERJ3GEYJ331	330	
R278	ERJ3GEYJ104	100k	
R279	ERJ3GEY0R00	0	
R280	ERJ3GEYJ102	1k	
R281	ERJ3GEYJ104	100k	
R282	ERJ3GEYJ104	100k	
R283	ERJ3GEYJ104	100k	
R285	ERJ3GEY0R00	0	
R286	ERJ3GEYJ1R0	1	
R287	ERJ3GEYJ103	10k	
R288	ERJ3GEYJ103	10k	
R289	ERJ3GEYJ103	10k	
R290	ERJ3GEYJ103	10k	
R291	ERJ3GEYJ103	10k	
R292	ERJ3GEYJ103	10k	
R293	ERJ3GEYJ103	10k	
R294	ERJ3GEYJ103	10k	
R295	ERJ3GEY0R00	0	
R296	ERJ3GEYJ103	10k	
R298	ERJ3GEYJ100	10	

Ref. No.	Part No.	Part Name & Description	Remarks
R299	ERJ3GEY0R00	0	
R300	ERJ3GEYJ273	27k	
R301	ERJ3GEYJ104	100k	
R302	ERJ3GEYJ104	100k	
R305	ERJ3GEYJ103	10k	
R306	ERJ3GEYJ103	10k	
R308	ERJ3GEYJ100	10	
R310	PQ4R18XJ000	0	S
R311	ERJ3GEYJ103	10k	
R312	ERJ8ENF4220V	422	
R313	ERJ8ENF4220V	422	
R314	ERJ8ENF4220V	422	
R315	ERJ8ENF4220V	422	
R316	ERJ8ENF4220V	422	
R317	ERJ8ENF4220V	422	
R318	ERJ8ENF4220V	422	
R319	ERJ8ENF4220V	422	
R323	ERJ8ENF4220V	422	
R324	ERJ8ENF4220V	422	
R325	ERJ3GEYJ101	100	
R326	ERJ3GEYJ471	470	
R330	ERJ3GEYJ102	1k	
R331	PQ4R18XJ000	0	S
R332	PQ4R18XJ000	0	S
R333	PQ4R18XJ000	0	S
R334	PQ4R18XJ000	0	S
R335	ERJ3GEYJ103	10k	
R336	ERJ3GEYJ103	10k	
R337	PQRD32R110FT	0.11	
R338	PQRD32R110FT	0.11	
R339	ERJ3GEY0R00	0	
R340	ERJ3GEYJ181	180	
R341	ERJ8ENF4220V	422	
R342	ERJ8ENF4220V	422	
L7	ERJ3GEY0R00	0	
C123	ERJ3GEYJ103	10k	
D22	PQ4R18XJ000	0	S
		(CAPACITORS)	
C1	ECUV2A101JCV	100p	
C2	ECUV2A101JCV	100p	
C3	ECUV1H100DCV	10p	
C5	ECUV1H100DCV	10p	
C6	ECEV1AA221	220	
C8	ECUV1H100DCV	10p	
C10	F1L2A104A006	0.1	
C12	ECUV1H121JCV	120p	
C13	ECUV1H121JCV	120p	
C14	ECST1AX226	22	
C15	PQCUV1H330JC	33p	
C16	PQCUV1H330JC	33p	
C17	ECJ1VB2A471K	470p	
C18	ECEA1EU102	1000	
C19	ECWU1474KCV	0.47	
C20	ECUV1C104KBV	0.1	

Ref. No.	Part No.	Part Name & Description	Remarks
C21	ECUV1E223KBV	0.022	
C22	ECWU1152JB5	PLASTIC FILM CAPACITOR	
C23	ECUV1C104KBV	0.1	
C24	ECUV1C104KBV	0.1	
C25	ECST1CY105	1	
C26	PQCUV1C474ZF	0.47	
C27	PQCUV1C474ZF	0.47	
C28	PQCUV1C474ZF	0.47	
C29	ECUV1C104KBV	0.1	
C30	ECA2AM470B	47p	
C31	ECUV1H120JCV	12p	
C32	ECUV1H120JCV	12p	
C33	ECUV1C104KBV	0.1	
C34	ECA2AM470B	47p	
C35	ECUV1C104KBV	0.1	
C36	ECUV1C104KBV	0.1	
C37	ECUV1C104KBV	0.1	
C38	ECEV1AA221	220	
C39	ECEV1AA221	220	
C40	ECEV1AA221	220	
C41	ECEV1AA221	220	
C42	ECST1AD107R	100	
C43	ECUV1C473KBV	0.047	
C47	PQCUV1A105KB	1	
C48	ECUV1C104KBV	0.1	
C51	ECUV1H100DCV	10p	
C54	ECUV1C104KBV	0.1	
C57	ECST1AY106	10	
C59	ECUV1C104KBV	0.1	
C60	ECUV1H100DCV	10p	
C65	ECUV1H101JCV	100p	
C66	ECUV1H100DCV	10p	
C68	ECUV1H100DCV	10p	
C69	ECUV1H100DCV	10p	
C70	ECUV1H100DCV	10p	
C72	PQCUV1H104ZF	0.1	S
C73	PQCUV1A105KB	1	
C74	PQCUV1H104ZF	0.1	S
C75	ECUV1H100DCV	10p	
C76	ECUV1H100DCV	10p	
C77	ECUV1H100DCV	10p	
C78	ECUV1C104KBV	0.1	
C79	ECST1AY106	10	
C80	ECUV1C104KBV	0.1	
C81	ECUV1H100DCV	10p	
C82	ECUV1H100DCV	10p	
C83	ECUV1C104KBV	0.1	
C84	ECUV1C104KBV	0.1	
C85	ECUV1C104KBV	0.1	
C86	ECUV1H333KDV	0.033	S
C89	ECUV1C104KBV	0.1	
C90	ECUV1H223KBV	0.022	
C91	ECST1AY106	10	
C92	ECUV1H100DCV	10p	

Ref. No.	Part No.	Part Name & Description	Remarks
C97	PQCUV1H104ZF	0.1	S
C98	PQCUV1H104ZF	0.1	S
C101	PQCUV1H683KB	0.068	
C102	PQCUV1H683KB	0.068	
C103	ECUV1C104KBV	0.1	
C104	ECUV1C104KBV	0.1	
C105	ECUV1C104KBV	0.1	
C106	ECUV1C104KBV	0.1	
C107	ECST1AY106	10	
C108	ECUV1C104KBV	0.1	
C109	ECST1AY106	10	
C110	ECST1AY106	10	
C111	ECST1AY106	10	
C112	ECUV1C104KBV	0.1	
C113	ECST1AY106	10	
C114	ECUV1H100DCV	10p	
C115	ECUV1C104KBV	0.1	
C116	ECUV1C104KBV	0.1	
C117	ECUV1C104KBV	0.1	
C118	ECUV1C104KBV	0.1	
C119	ECUV1C104KBV	0.1	
C120	ECUV1C104KBV	0.1	
C121	ECUV1C104KBV	0.1	
C124	ECUV1H101JCV	100p	
C125	ECUV1H100DCV	10p	
C126	ECUV1H100DCV	10p	
C127	ECUV1H100DCV	10p	
C128	ECUV1C104KBV	0.1	
C129	ECUV1H390JCV	39p	
C130	ECUV1H103KBV	0.01	
C131	ECUV1H060DCV	6p	
C132	ECUV1C104KBV	0.1	
C133	ECUV1H390JCV	39p	
C134	ECUV1C104KBV	0.1	
C135	ECUV1H060DCV	6p	
C136	PQCUV1A105KB	1	
C139	ECUV1H102KBV	0.001	
C140	ECUV1A105ZFV	1	
C142	ECUV1A105ZFV	1	
C143	ECST0GY106	10	
C144	ECUV1A105ZFV	1	
C145	ECUV1H100DCV	10p	
C146	ECUV1H100DCV	10p	
C147	ECUV1H101JCV	100p	
C148	ECUV1H100DCV	10p	
C149	ECUV1H101JCV	100p	
C150	PQCUV1A105KB	1	
C151	ECUV1H100DCV	10p	
C152	ECUV1A105ZFV	1	
C153	ECUV1H100DCV	10p	
C154	ECUV1H101JCV	100p	
C155	ECUV1H101JCV	100p	
C156	ECUV1C104KBV	0.1	
C157	ECUV1C104KBV	0.1	

Ref. No.	Part No.	Part Name & Description	Remarks
C158	ECUV1H100DCV	10p	
C159	ECUV1C104KBV	0.1	
C160	ECUV1C104KBV	0.1	
C161	ECUV1C104KBV	0.1	
C162	ECUV1H100DCV	10p	
C163	ECUV1H100DCV	10p	
C164	ECUV1H100DCV	10p	
C165	ECUV1H330JCV	33p	
C166	ECUV1H100DCV	10p	
C167	ECUV1H100DCV	10p	
C168	ECUV1H100DCV	10p	
C169	ECUV1H100DCV	10p	
C170	ECUV1H100DCV	10p	
C171	ECUV1H100DCV	10p	
C172	PQCUV1C224KB	0.22	
C173	ECUV1H100DCV	10p	
C174	ECUV1H100DCV	10p	
C175	ECUV1H100DCV	10p	
C176	ECUV1C104KBV	0.1	
C177	ECUV1H100DCV	10p	
C178	ECUV1H100DCV	10p	
C179	ECUV1H100DCV	10p	
C180	ECUV1H100DCV	10p	
C181	ECUV1H102KBV	0.001	
C182	ECUV1H100DCV	10p	
C183	ECUV1H100DCV	10p	
C185	PQCUV1C474ZF	0.47	
C186	ECUV1C104KBV	0.1	
C187	ECST1CY105	1	
C188	ECUV1C104KBV	0.1	
C189	ECUV1C104KBV	0.1	
C190	ECUV1H100DCV	10p	
C191	ECUV1H100DCV	10p	
C192	ECUV1H100DCV	10p	
C193	ECUV1H100DCV	10p	
C194	ECUV1H100DCV	10p	
C195	ECUV1H100DCV	10p	
C197	ECUV1H100DCV	10p	
C199	ECUV1H100DCV	10p	
C202	ECUV1H100DCV	10p	
C203	ECUV1H100DCV	10p	
C204	ECJ1VC2A100D	10p	
C205	ECJ1VC2A100D	10p	
C206	ECJ1VC2A100D	10p	
C207	ECJ1VC2A100D	10p	
C208	ECJ1VC2A100D	10p	
C209	ECJ1VC2A100D	10p	
C210	ECJ1VC2A100D	10p	
C211	ECUV1H100DCV	10p	
C212	ECJ1VC2A100D	10p	
C213	ECUV1H100DCV	10p	
C214	ECUV1H100DCV	10p	
C215	ECUV1H100DCV	10p	
C216	ECUV1H100DCV	10p	

Ref. No.	Part No.	Part Name & Description	Remarks
C217	ECUV1H100DCV	10p	
C218	ECJ1VC2A100D	10p	
C219	ECJ1VC2A100D	10p	
C220	ECUV1H100DCV	10p	
C221	ECUV1H100DCV	10p	
C222	ECUV1H100DCV	10p	
C223	ECUV1H100DCV	10p	
C225	ECUV1H100DCV	10p	
C226	ERJ3GEYJ153	15k	
C227	ECUV1H100DCV	10p	
C228	ECJ1VC2A100D	10p	
C229	ECJ1VC2A100D	10p	
C230	ECUV1H100DCV	10p	
C231	ECUV1H100DCV	10p	
C232	ECUV1H100DCV	10p	
C252	ECUV1H100DCV	10p	
C253	ECUV1H100DCV	10p	
C254	ECUV1H100DCV	10p	
C255	ECUV1H100DCV	10p	
C256	ECUV1H100DCV	10p	

19.1.3. Operational P. C. Board Parts

Ref. No.	Part No.	Part Name & Description	Remarks
PCB2	PQWP2D707EXH	OPERATIONAL P.C BOARD ASS'Y (RTL)	
		(DIODES)	
D502	PQVDBR1112H	DIODE(SI)	S
D503	PQVDPY1112H	DIODE(SI)	S
D504	PQVDPY1112H	DIODE(SI)	S
		(CONNECTOR)	
CN501	PQJS07B37ZAT	CONNECTOR	

19.1.4. RF Unit PARTS

Ref. No.	Part No.	Part Name & Description	Remarks
RFM1	PQLZ10014Z	RF BLOCK	

19.2. Handset

19.2.1. Cabinet and Electrical Parts

Ref. No.	Part No.	Part Name & Description	Remarks
101	PQAS3P07Y	SPEAKER	
102	PQHS10430Y	CUSHION LCD	
103	PQBC10323Z1	NAVI BUTTON	S
104	PQBC10314Z1	SP PHONE BUTTON	S
105	PQBX10345Y1	FUNCTION BUTTON	S
106	PQGG10116Z1	GRILLE	S
107	PQGP10176Z1	LCD PANEL	S
108	PQKE10110Z1	DATA PORT CAP	S
109	PQHG10637Z	RUBBER	
110	PQHX11030Z	SHEET	
111	PQJT10168Y	CHARGE TERMINAL (L)	
112	PQJT10169Y	BATTERY TERMINAL (R)	
113	PQSX10161Y	RUBBER SWITCH	
114	PQHR10778Z	SP HOLDER	
115	L5DBBDC00001	LIQUID CRYSTAL DISPLAY	
116	L0AD02A00008	SPEAKER	
117	PQHR10781Z	LCD PLATE	
118	PQHR10779Y	LCD HOLDER	
119	PQHS10467Z	SPEAKER NET	
120	PQHX10963Y	LCD REFLECTOR SHEET	
121	PQHX10962Z	LCD COVER SHEET	
122	PQGT14383Z	NAME PLATE	
123	PQHG10589Y	SP RUBBER SHEET	
124	PQHS10457Z	SPEAKER NET	
125	PQHX10990Y	SHEET PET	
126	PQJC10046Z	BATTERY CONTACT (A)	
127	PQJC10047Y	BATTERY CONTACT (B)	
128	PQJC10048Y	BATTERY CONTACT (C)	
129	PQKE10108Z1	E/P CAP	S
130	PQSA10117Y	ANTENNA	
131	PQKF10497Y1	REAR CABINET	
132	PQYM10107Y1	FRONT CABINET	S
133	PQHS10483Z	HIMERON TAPE	S
134	PQHS10479Z	HIMERON TAPE	S
135	PQHG10634X	SPACER	
136	PQKK10109Z1	BATTERY COVER	

19.2.2. Main P. C. Board Parts

Ref. No.	Part No.	Part Name & Description	Remarks
PCB100	PQWPCD707EXR	MAIN P.C BOARD ASS'Y (RTL)	
		(ICS)	
IC1	PQVINS14404C	IC	
IC2	PSVIMC34119A	IC	
IC3	PQVIV6325LTF	IC	S
IC4	PQVIM3238EA	IC	
IC5	PQVITC4S66F	IC	S
IC6	PQVIMS30R531	IC	
IC7	C0JBAE000087	IC	
		(TRANSISTORS)	
Q1	PQVTFDN335N	TRANSISTOR(SI)	S
Q2	PQVTBC80725T	TRANSISTOR(SI)	S
Q3	PQVTBC80725T	TRANSISTOR(SI)	S
Q4	PQVTBC80725T	TRANSISTOR(SI)	S
Q5	PSVTDTC143X	TRANSISTOR(SI)	
Q7	PSVTDTC144E	TRANSISTOR(SI)	
Q8	PSVTDTC143X	TRANSISTOR(SI)	
Q9	PSVTDTC143X	TRANSISTOR(SI)	
Q10	PSVTDTC143X	TRANSISTOR(SI)	
Q11	PSVTDTC143X	TRANSISTOR(SI)	
Q12	PSVTDTC143X	TRANSISTOR(SI)	
Q13	PQVTDTA114YU	TRANSISTOR(SI)	S
		(DIODES)	
D1	MA2H73600L	DIODE(SI)	
D2	PQVDRLZ2R0BT	DIODE(SI)	
D3	MA110	DIODE(SI)	
D4	MA2Z72000	DIODE(SI)	
D5	MA8047	DIODE(SI)	
D6	PQVDHVC359TX	DIODE(SI)	
D7	LNJ115W89RA	DIODE(SI)	
D8	LNJ115W89RA	DIODE(SI)	
D9	LNJ115W89RA	DIODE(SI)	
D10	PQVDBR1111C	DIODE(SI)	S
D11	LNJ308G8JRA	DIODE(SI)	
D12	LNJ308G8JRA	DIODE(SI)	
D13	LNJ308G8JRA	DIODE(SI)	
D14	LNJ308G8JRA	DIODE(SI)	
D15	PQVDRLZ2R0BT	DIODE(SI)	
D17	MA8047	DIODE(SI)	
D18	MA8047	DIODE(SI)	
D19	MA110	DIODE(SI)	
D20	MA110	DIODE(SI)	
D21	MA8056H	DIODE(SI)	
D22	MA8047	DIODE(SI)	
D23	MA8047	DIODE(SI)	
		(COILS)	
F1	PQLQR2M5N6K	COIL	S
L1	PQLES01C220	COIL	S
L2	G1C6R8MA0046	COIL	
L3	G1C6R8MA0046	COIL	
L4	PQLQR2M4N7K	COIL	S
L5	PQLQR2K1A102	COIL	
		(BATTERY TERMINAL)	
J1	PQJT10152Y	BATTERY TERMINAL	

Ref. No.	Part No.	Part Name & Description	Remarks
J2	PQJT10152Y	BATTERY TERMINAL	
		(CONNECTORS)	
J10	PSJS22A62Z	CONNECTOR	S
J11	PQJS08B39Z	CONNECTOR	
J13	PSJP02A44Z	CONNECTOR	S
		(OTHERS)	
E101	PQJS02P39Z	CONNECTOR	
M1	L0CBAB000039	MICROPHONE	
A101	PQJT10152Y	BATTERY TERMINAL	
A102	PQJT10152Y	BATTERY TERMINAL	
J9	PQJJ1C002Z	JACK/SOCKET	S
X1	PQVCF1036N4Z	CRYSTAL OSCILLATOR	
X2	PQVBCSA9.21M	CERAMIC OSCILLATOR	
		(RESISTORS)	
R1	ERJ6RSJR10V	0.1	
R2	ERJ2GEJ105X	1M	
R3	ERJ2GEJ474X	470k	
R4	ERJ2GEJ682	6.8k	
R5	ERJ3GEYF103	10k	S
R6	ERJ3GEYF622T	6.2k	
R7	ERJ2GEJ153	15k	
R8	ERJ2GEJ104	100k	
R9	ERJ2GEJ104	100k	
R10	ERJ2GEJ103	10k	
R11	ERJ2GEJ103	10k	
R12	ERJ3GEYJ122	1.2k	
R13	ERJ2GEJ562X	5.6k	
R14	ERJ2GEJ682	6.8k	
R15	ERJ2GEJ473	47k	
R16	ERJ2GEJ103	10k	
R18	ERJ2GEJ473	47k	
R19	ERJ2GEJ104	100k	
R20	ERJ2GEJ100	10	
R21	ERJ2GEJ100	10	
R23	ERJ2GEJ393X	39k	
R24	ERJ2GEJ101	100	
R25	ERJ3GEY0R00	0	
R26	ERJ2GEJ101	100	
R28	ERJ3GEYJ101	100	
R29	ERJ2GEJ101	100	
R31	ERJ2GEJ473	47k	
R32	ERJ2GEJ472X	4.7k	
R33	ERJ2GEJ471X	470	
R34	ERJ2GEJ471X	470	
R35	ERJ2GEJ102	1k	
R36	ERJ2GEJ102	1k	
R37	ERJ2GEJ102	1k	
R38	ERJ2GEJ101	100	
R39	ERJ2GEJ100	10	
R40	ERJ2GEJ105X	1M	
R41	ERJ2GEJ105X	1M	
R43	ERJ2GEJ102	1k	
R44	ERJ2GEJ273X	27k	
R45	ERJ2GEJ104	100k	

Ref. No.	Part No.	Part Name & Description	Remarks
R47	ERJ3GEY0R00	0	
R48	ERJ3GEYJ390	39	
R49	ERJ3GEYJ221	220	
R50	ERJ3GEYJ390	39	
R51	PQ4R10XJ820	82	S
R54	ERJ3GEYJ221	220	
R55	ERJ3GEYJ390	39	
R56	ERJ3GEYJ221	220	
R60	ERJ3GEYJ471	470	
R66	ERJ2GEJ101	100	
R67	ERJ2GEJ105X	1M	
R70	ERJ2GEJ103	10k	
R71	PQ4R10XJ100	10	S
R73	ERJ2GEJ103	10k	
R74	ERJ3GEYJ100	10	
R76	ERJ3GEYF824	820k	S
R77	ERJ3GEYF394T	390k	
R78	ERJ2GEJ330	33	
R79	ERJ2GEJ330	33	
R83	ERJ2GEJ392X	3.9k	
R84	ERJ2GEJ103	10k	
R85	PQ4R18XF2R70	2.7	
R86	ERJ2GEJ102	1k	
R92	ERJ2GEJ101	100	
R93	ERJ2GEJ472X	4.7k	
R94	ERJ2GEJ222	2.2k	
R98	ERJ2GEJ103	10k	
R102	ERJ3GEYJ1R5V	1.5	
R103	ERJ2GEJ000	0	
R104	ERJ2GEJ000	0	
R105	ERJ2GEJ222	2.2k	
R106	ERJ2GEJ101	100	
R108	ERJ2GEJ100	10	
R109	ERJ2GEJ100	10	
R110	ERJ2GEJ100	10	
R111	ERJ2GEJ100	10	
R112	ERJ2GEJ100	10	
R113	ERJ2GEJ100	10	
R114	ERJ2GEJ100	10	
R116	ERJ2GEJ000	0	
C98	ERJ3GEY0R00	0	
		(CAPACITORS)	
C1	ECEV0JA221WP	220	
C2	ECUE1H100DCQ	10p	S
C3	PQCUV1H102J	0.001	S
C4	ECST0JC227R	220	
C5	ECST0JC227R	220	
C6	ECUV1A105ZV	1	
C7	ECUE1H101JCQ	100p	S
C8	ECUE1H100DCQ	10p	S
C9	ECST0GY106	10	
C10	ECUE1H220JCQ	22p	S
C11	ECUE1H101JCQ	100p	S
C12	ECUE1H100DCQ	10p	S

Ref. No.	Part No.	Part Name & Description	Remarks
C13	PQCUV1C105ZF	1	
C14	PQCUV1C224KB	0.22	
C15	ECUE1H102KBQ	0.001	S
C16	ECUE1A104KBQ	0.1	S
C17	ECUV1C104KBV	0.1	
C19	ECUE1H100DCQ	10p	S
C21	ECUE1H100DCQ	10p	S
C22	ECUE1H100DCQ	10p	S
C23	ECUE1H100DCQ	10p	S
C24	PQCUV1C105ZF	1	
C25	ECUV1C104KBV	0.1	
C26	ECUV1C104KBV	0.1	
C27	ECUV1C104KBV	0.1	
C28	ECUE1H100DCQ	10p	S
C30	F1G1E4720004	0.0047	
C31	F1G1E4720004	0.0047	
C32	ECUE1H100DCQ	10p	S
C34	ECUE1A823KBQ	0.082	
C35	ECUE1A823KBQ	0.082	
C36	ECUE1H100DCQ	10p	S
C37	ECUE1H100DCQ	10p	S
C38	ECUV1C104KBV	0.1	
C39	PQCUV1C105ZF	1	
C40	PQCUV1C105ZF	1	
C41	ECUE1H100DCQ	10p	S
C42	ECST0GY106	10	
C43	ECUE1H100DCQ	10p	S
C44	ECUE1H100DCQ	10p	S
C45	ECUE1H151JCQ	150p	
C46	ECST0GY106	10	
C47	ECUE1H101JCQ	100p	S
C48	ECUE1C103KBQ	0.01	
C49	ECUE1H102KBQ	0.001	S
C50	ECUE1H220JCQ	22p	S
C51	ECUE1H390JCQ	39p	
C52	ECUV1C104KBV	0.1	
C54	ECUV1C104KBV	0.1	
C55	ECUV1C104KBV	0.1	
C56	ECUV1C104KBV	0.1	
C57	ECUV1C104KBV	0.1	
C58	PQCUV1A225KB	2.2	S
C59	ECUE1H330JCQ	33p	S
C60	ECUV1C104KBV	0.1	
C61	ECUV1C104KBV	0.1	
C62	ECUV1C104KBV	0.1	
C63	ECUV1C104KBV	0.1	
C64	ECUV1C104KBV	0.1	
C65	ECUV1C104KBV	0.1	
C68	ECUE1A104KBQ	0.1	S
C69	PQCUV1C224KB	0.22	
C70	ECST1AZ475	4.7	
C71	ECST1AZ475	4.7	
C72	PQCUV1C224KB	0.22	
C73	ECST1AZ475	4.7	

Ref. No.	Part No.	Part Name & Description	Remarks
C74	ECUE1H300JCQ	30p	
C75	ECUE1H300JCQ	30p	
C76	ECUE1A104KBQ	0.1	S
C77	ECUE1A104KBQ	0.1	S
C78	ECUE1A104KBQ	0.1	S
C79	ECUE1A104KBQ	0.1	S
C80	ECUE1H100DCQ	10p	S
C81	ECUE1H100DCQ	10p	S
C82	ECUE1H100DCQ	10p	S
C83	ECUE1A104KBQ	0.1	S
C84	ECUV1H223KBV	0.022	
C85	F1G1H152A458	0.0015	
C87	ECUV1C224KB	0.22	
C88	ECUV1C224KB	0.22	
C89	ECUV1C104KBV	0.1	
C90	ECUE1A104KBQ	0.1	S
C91	ECUE1H102KBQ	0.001	S
C92	ECUE1H102KBQ	0.001	S
C93	ECUV1A106ZF	10	S
C94	ECUE1H100DCQ	10p	S
C95	ECUE1H100DCQ	10p	S
C96	ECUV1C104KBV	0.1	
C97	ECST0GY106	10	
C99	ECUE1C223KBQ	0.022	S
C100	ECUE1C223KBQ	0.022	S
C102	ECST0GY106	10	
C106	ECUE1H221JCQ		
C108	ECUE1H102KBQ	0.001	S
C109	ECUE1H102KBQ	0.001	S
C110	ECUE1H102KBQ	0.001	S

19.2.3. RF Unit Parts

Ref. No.	Part No.	Part Name & Description	Remarks
RFM1	PQLZ10013Z	RF BLOCK	

19.2.4. Accessories and Packing Materials

Ref. No.	Part No.	Part Name & Description	Remarks
A1	PQLV10CEZ	AC ADAPTOR	
A2	PQJA10132Z	TEL CORD (W/PLUG)	
A3	PQJA10075Z	TEL CORD (6FT/2WIRE)	
A4	PQJA10095Z	TEL CORD	
A5	PQKL10038Y1	WALL MOUNT ADAPTOR	S
A6	PQQX12866Y	INSTRUCTION BOOK	
A7	PQKE10120Z1	BELT CLIP	S
A8	PQJA10133Z	INTERFACE CORD (W/PLUG)	
P1	PQGT14929Y	NAME PLATE	
P2	PQPK13251Z	GIFT BOX	
P3	PQPP10084Z	PROTECTION COVER (HANDSET)	
P4	PQPP10085Z	PROTECTION COVER (BASE UNIT)	

20. SCHEMATIC DIAGRAM (BASE UNIT)

21. SCHEMATIC DIAGRAM (HANDSET)

22. CIRCUIT BOARD (BASE UNIT)

22.1. Component View

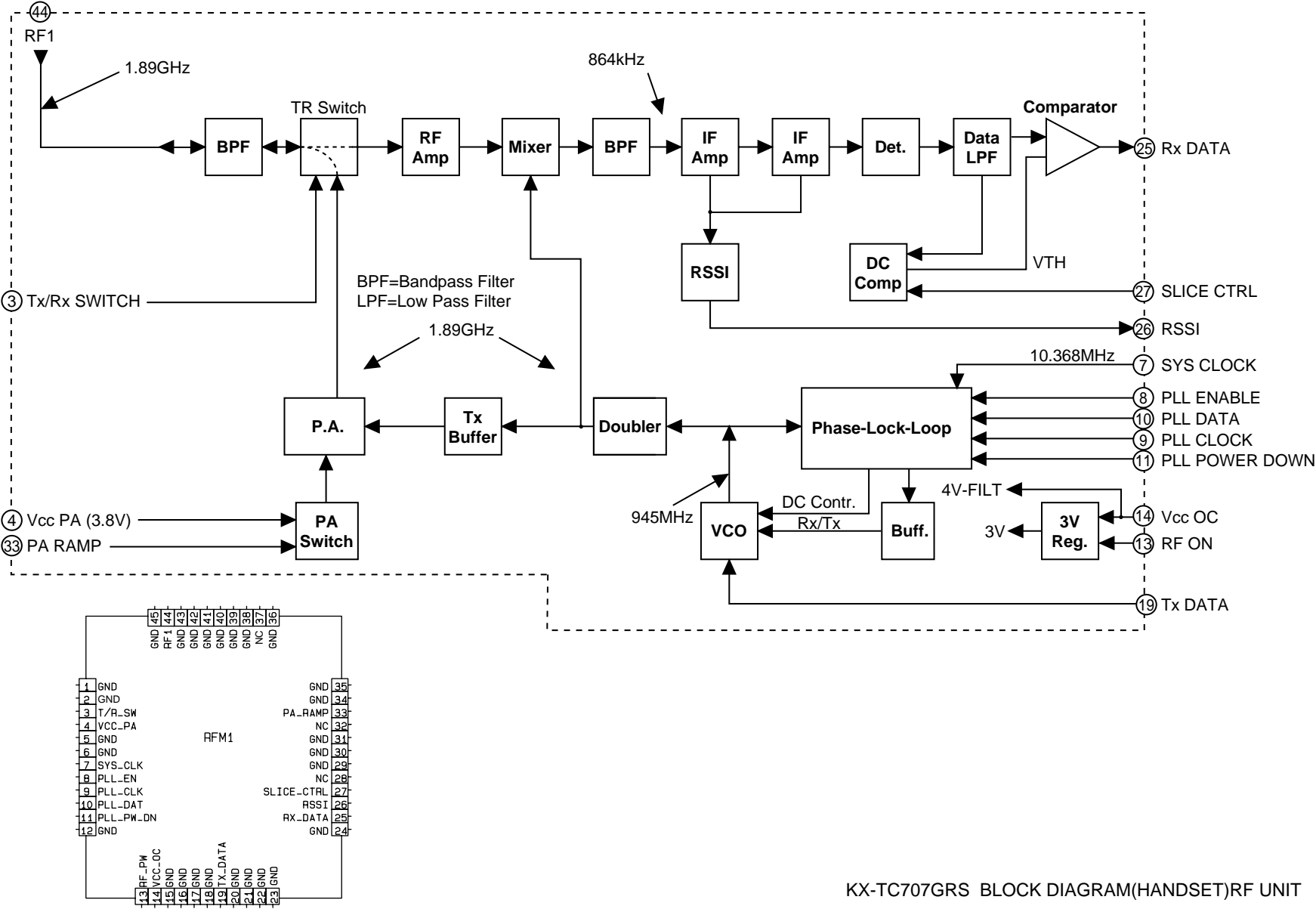
22.2. Flow Solder Side View

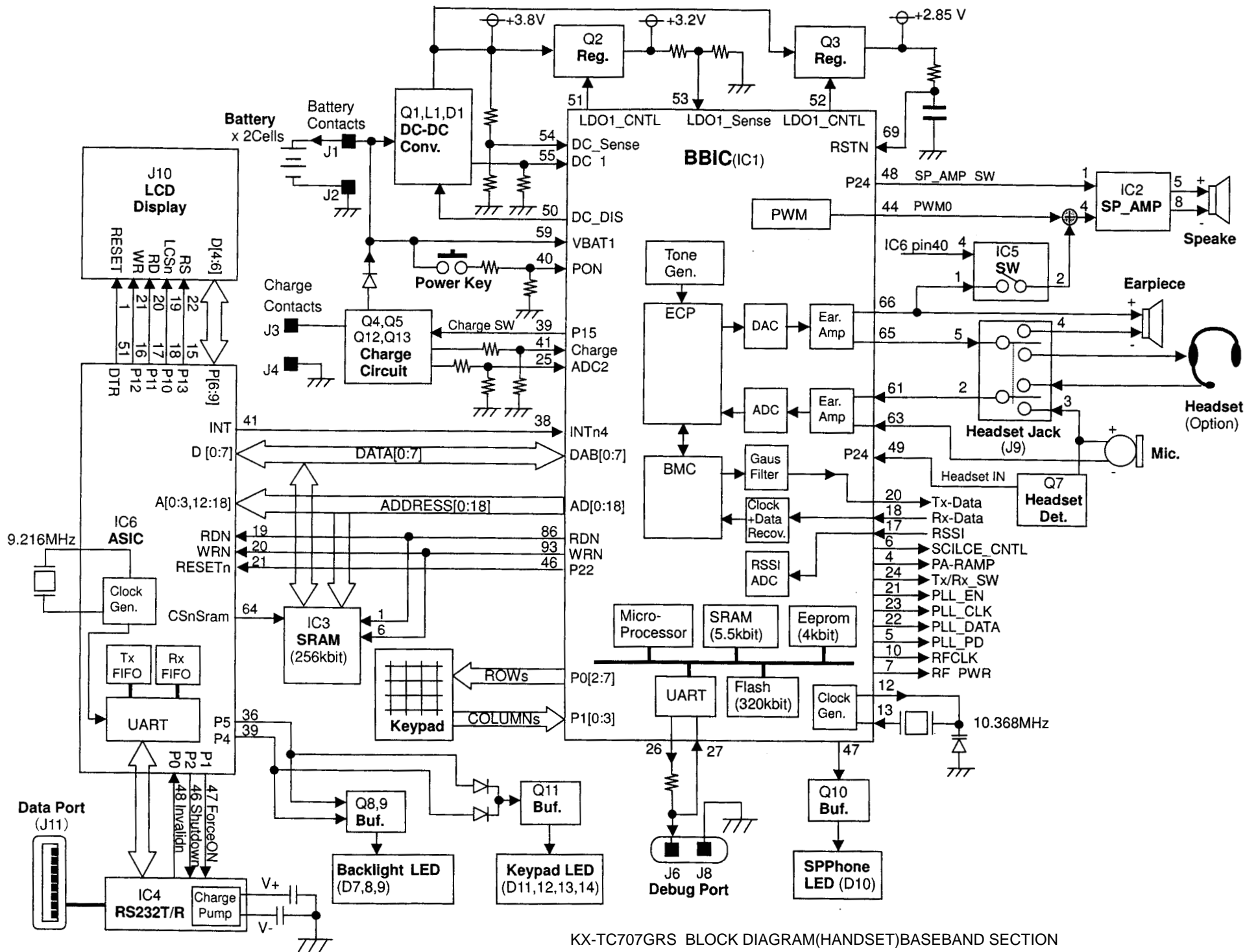
23. CIRCUIT BOARD (HANDSET)

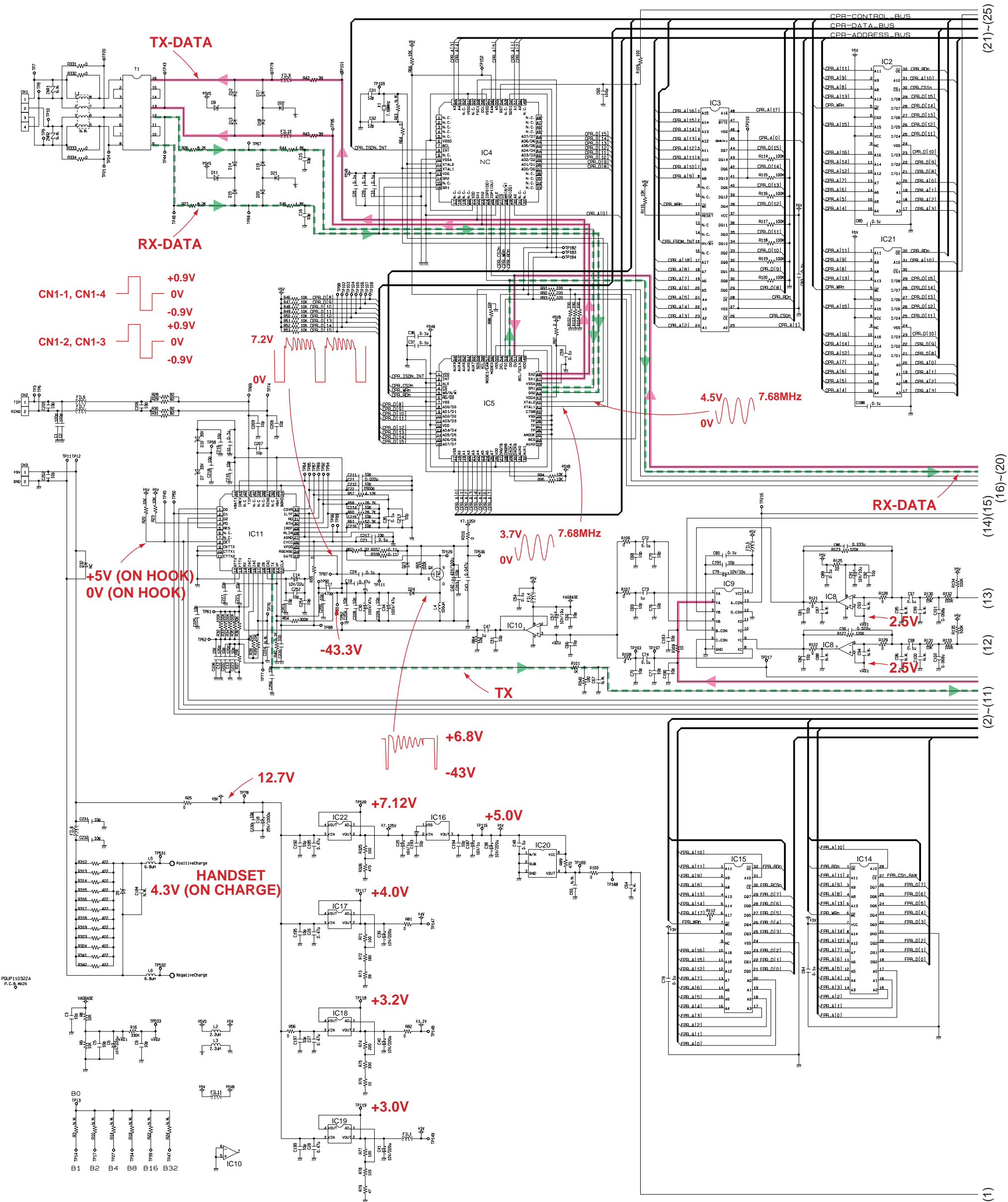
23.1. Component View

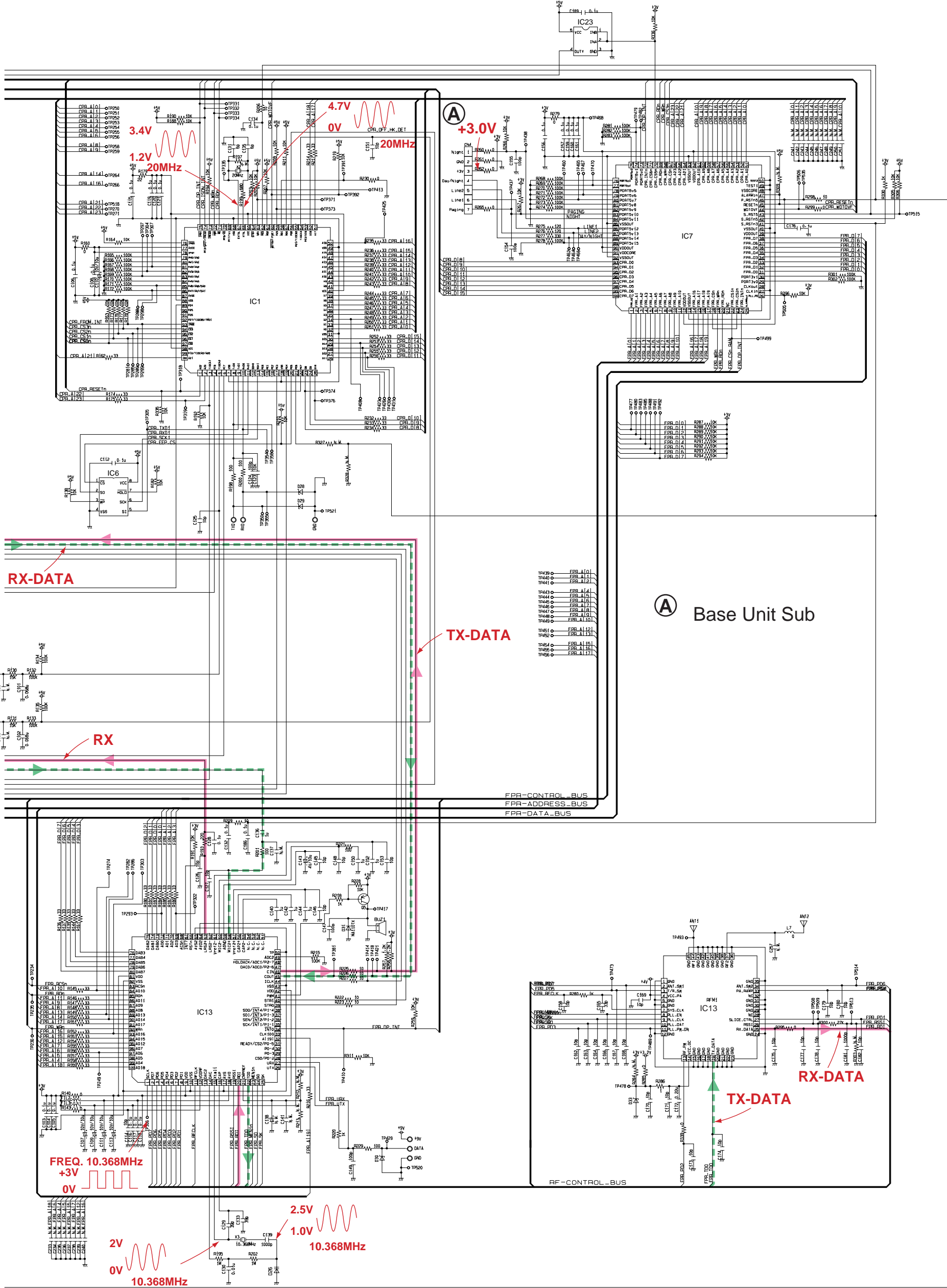
23.2. Flow Solder Side View

M / KXTCD707GRS-UK





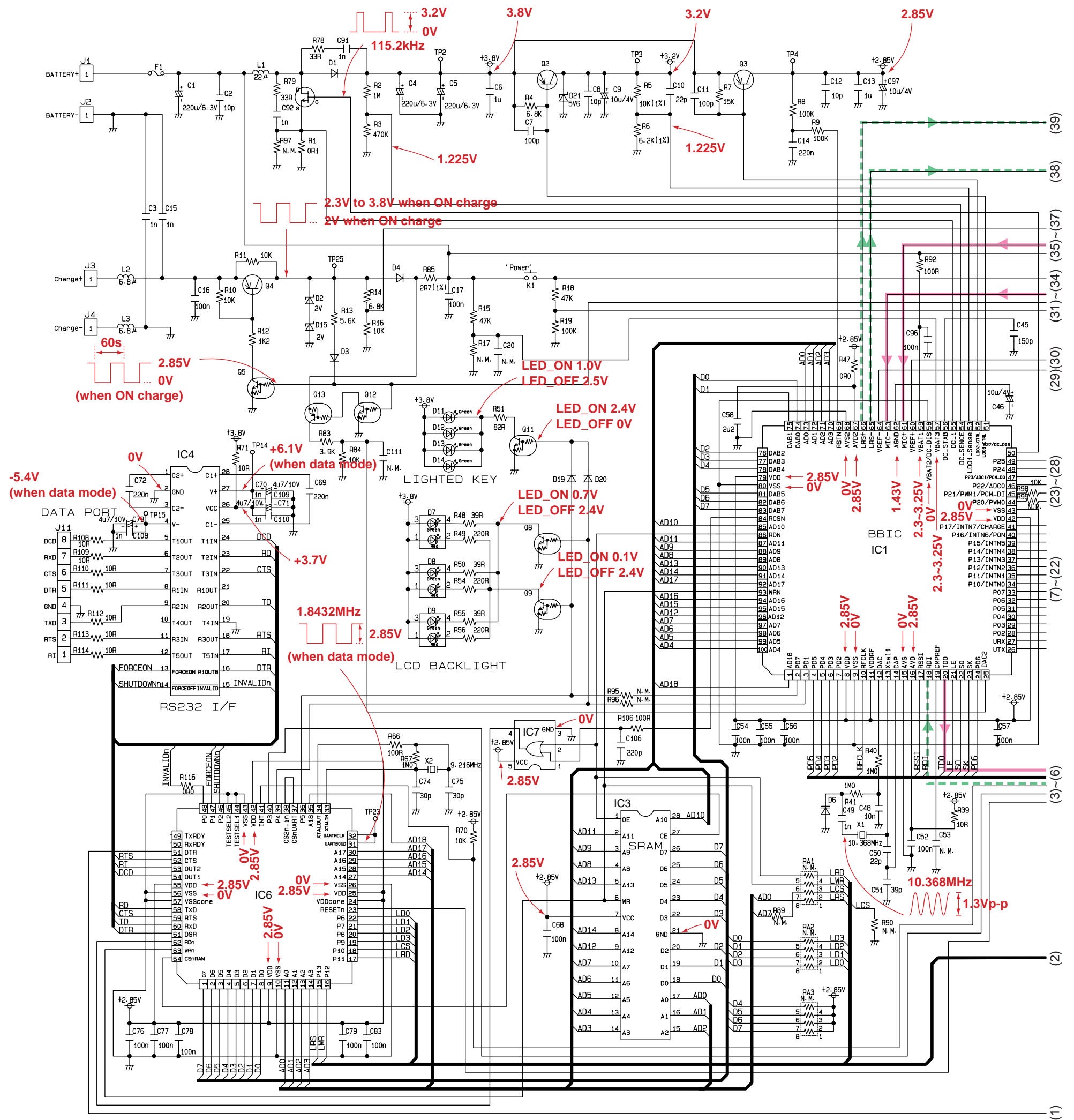


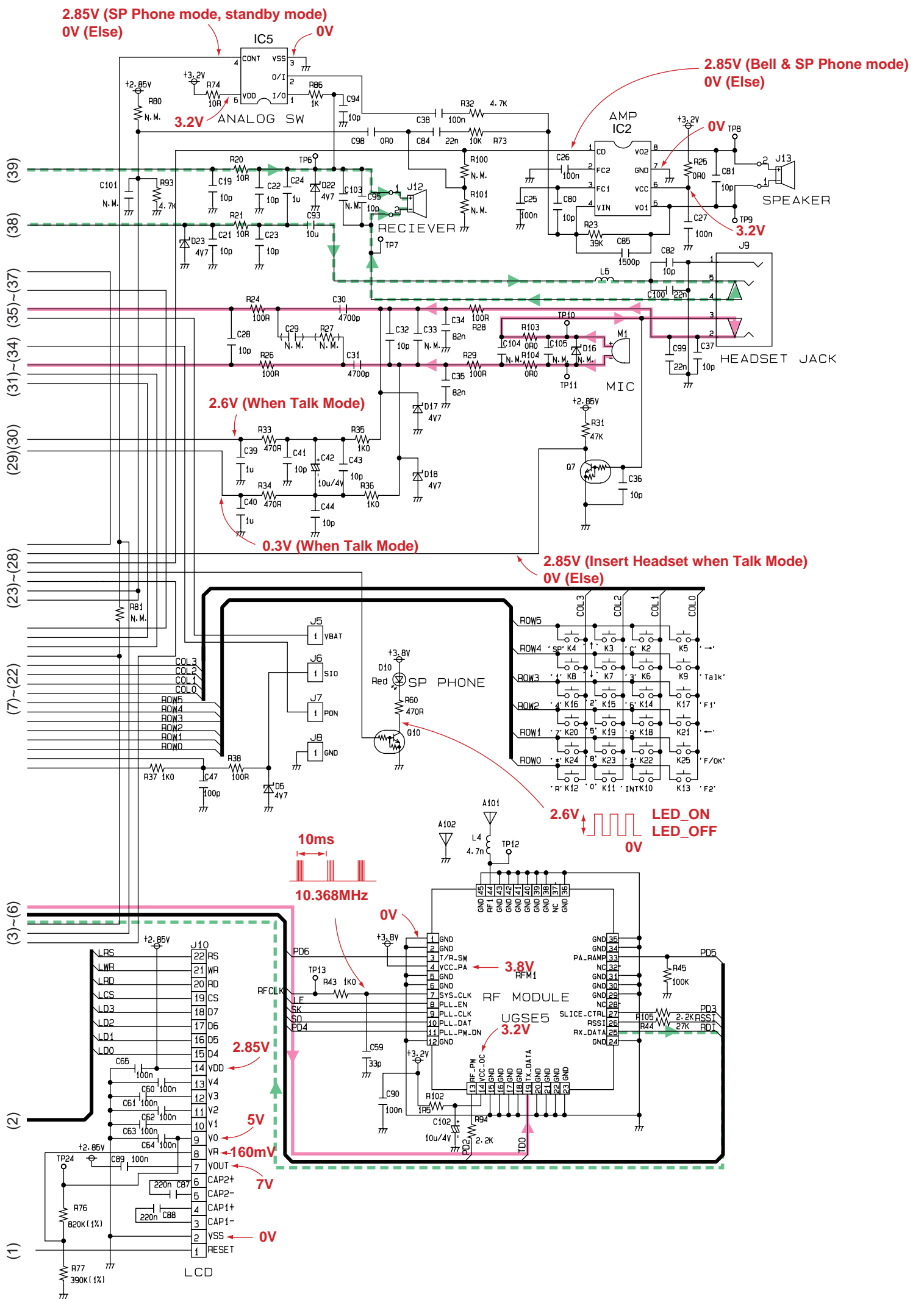


Base Unit Sub

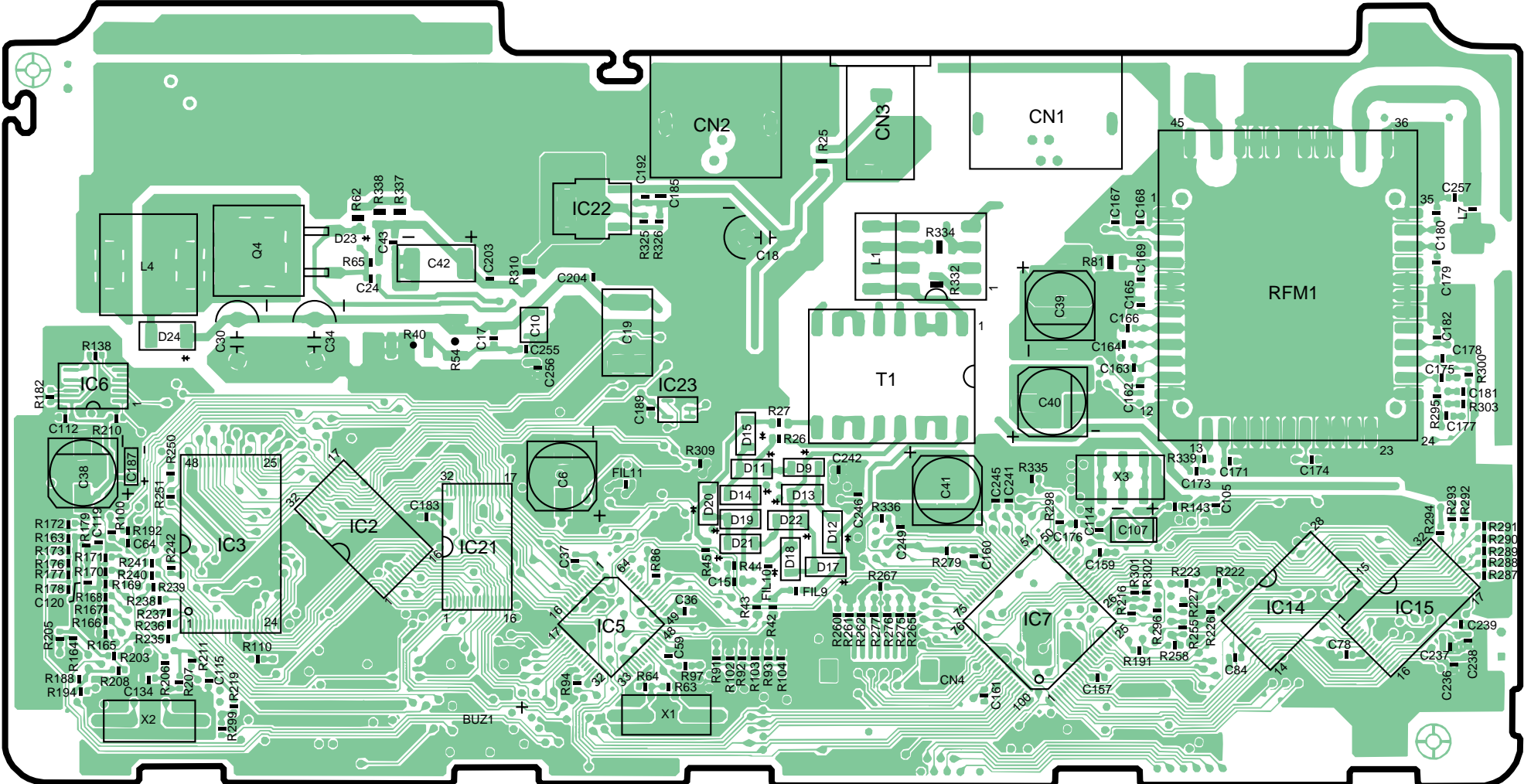
TX-DATA

RX-DATA

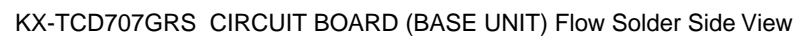


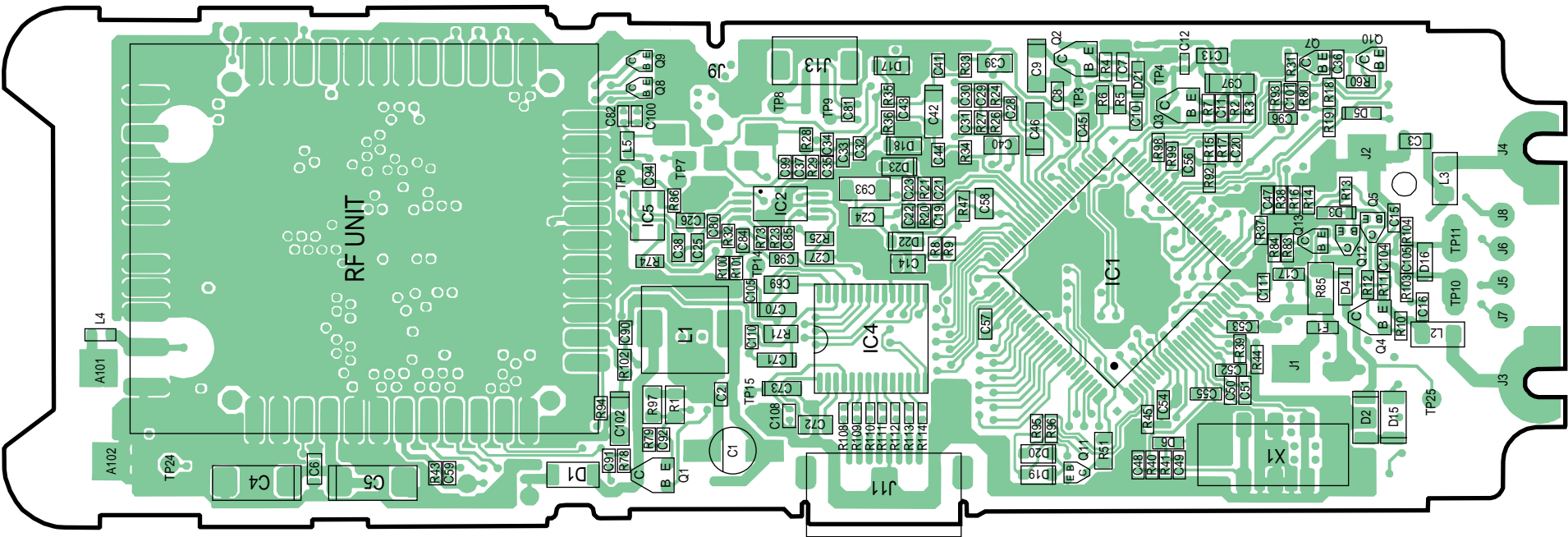


KX-TC707GRS: SCHEMATIC DIAGRAM (HANDSET)

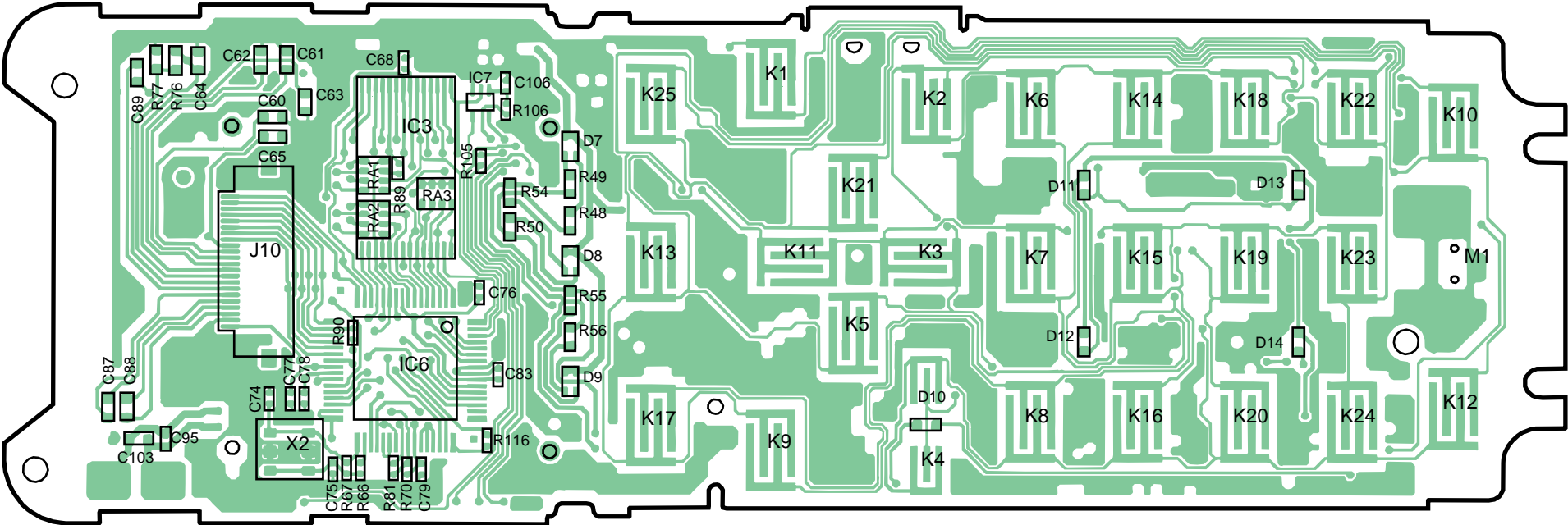


KX-TC707GRS CIRCUIT BOARD (BASE UNIT) Component View

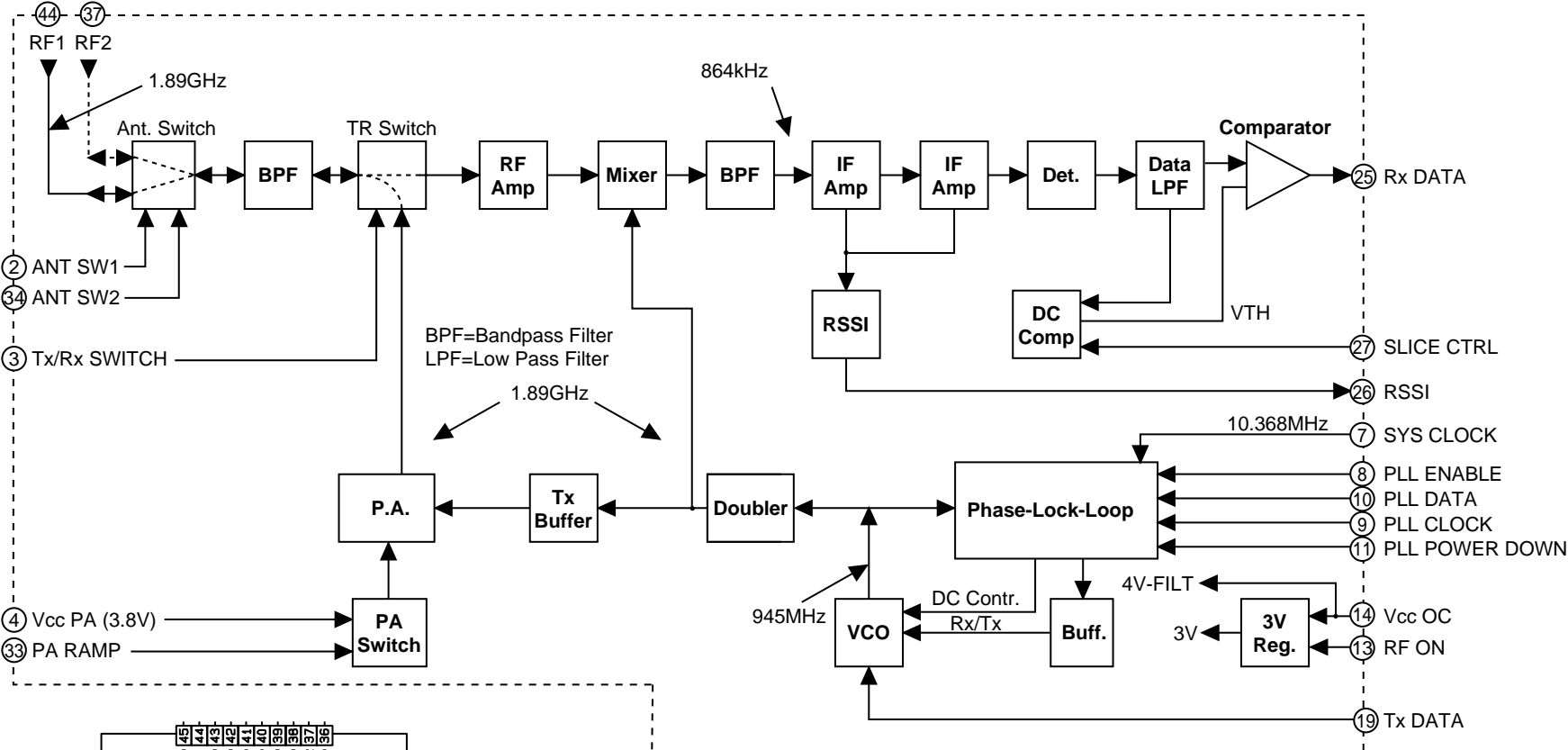




KX-TCD707GRS CIRCUIT BOARD (HANDSET) Component View



KX-TC707GRS CIRCUIT BOARD (HANDSET) Flow Solder Side View



KX-TC707GRS BLOCK DIAGRAM(BASE UNIT)RF UNIT

